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DEFENSE INDUSTRY BULLETIN

Vol. 4 No. 3 March 1968

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ROBERT S. McNAMARA

Secretary of Defense McNamara's seventh and final statement to Congress on the FY 1969–73 Defense Program and the FY 1969 Defense Budget begins on page 2.

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The *Defense Industry Bulletin* is published monthly by the Business & Labor Division, Directorate for Community Relations, Office of the Assistant Secretary of Defense (Public Affairs). Use of funds for printing this publication was approved by the Director of the Bureau of the Budget.

The purpose of the *Bulletin* is to serve as a means of communication between the Department of Defense (DOD) and its authorized agencies and defense contractors and other business interests. It will serve as a guide to industry concerning official policies, programs and projects, and will seek to stimulate thought by members of the defense-industry team in solving the problems that may arise in fulfilling the requirements of the DOD.

Material in the *Bulletin* is selected to supply pertinent unclassified data of interest to the business community. Suggestions from industry representatives for topics to be covered in future issues should be forwarded to the Editor. Telephone queries: (202) OXford 5-2709.

The *Bulletin* is distributed without charge each month to representatives of industry and agencies of the Department of Defense, Army, Navy and Air Force. Subscription requests should be made in writing on letterhead and addressed to the Business & Labor Division, OASD(PA), Room 1E764, The Pentagon, Washington, D.C. 20301.

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DEFENSE INDUSTRY BULLETIN

Published by the
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Defense

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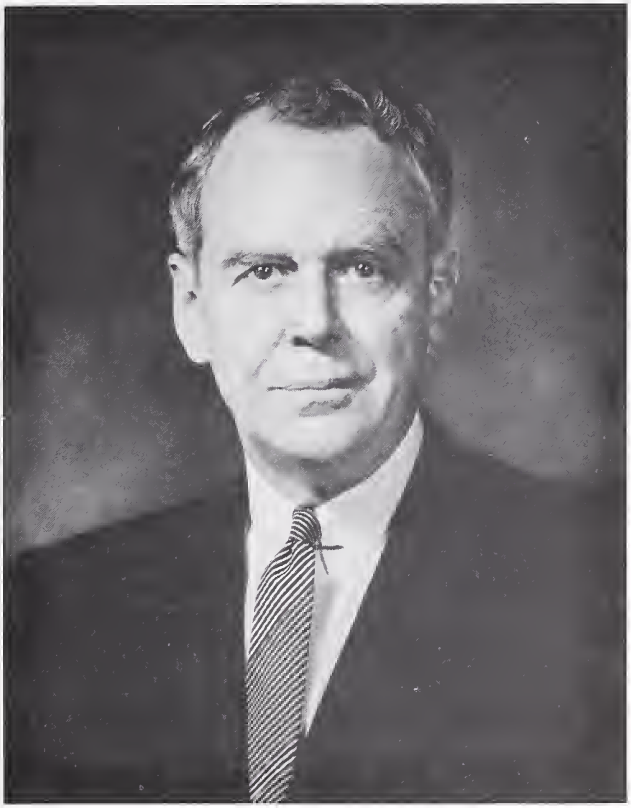
Clark M. Clifford Appointed Secretary of Defense



FABIAN BACHRACH

Clark M. Clifford

President Lyndon B. Johnson has appointed Clark M. Clifford, 61, Secretary of Defense succeeding Robert S. McNamara. Mr. McNamara is assuming new duties as President of the World Bank.

Mr. Clifford has practiced law in Washington, D.C., since leaving Government service in 1950 and has served in an advisory capacity to President Johnson and President John F. Kennedy.

Born in Fort Scott, Kan., Dec. 25, 1906, Mr. Clifford was graduated by Washington University in St. Louis where he also obtained his law degree in 1928.

During World War II, he served in the U.S. Navy as special assistant to Commander, Western Sea Frontier; as assistant Naval Aide to the President and as Naval Aide to the President. He left the Navy in 1946 with the rank of captain.

From June 1946 to Feb. 1950, Mr. Clifford served as Special Counsel to President Harry S. Truman.

In 1945, President Truman assigned him the task of conducting a study in depth on the unification of the Armed Services. He worked with the War Department, the Navy Department, other departments and agencies involved, and the Congress for two years thereafter. The resulting passage of the National Security Act in 1947 was in part due to the work performed by Mr. Clifford, one of the principal architects of this legislation.

In 1949, he worked with the Secretary of Defense, other departments and the Congress on the passage of the National Security Act Amendments of 1949, which strengthened the authority of the Secretary of Defense and changed the national military establishment into a regular executive Department of Defense.

Since 1960, he has served as a member of the Committee on the Defense Establishment, appointed by Senator John F. Kennedy to survey the organization, management and administration of the Defense Department; as a member of President Kennedy's Foreign Intelligence Advisory Board, becoming chairman of the board in April 1963; as adviser to President Johnson at the Manila Conference in 1966; and in 1967 he visited a number of Southeast Asian and Pacific countries as personal emissary of President Johnson.

Defense Budget Highlights

Approach to the FY 1969-73 Program and FY 1969 Budget

[*Editor's Note: This issue of the* Defense Industry Bulletin *is devoted almost entirely to Secretary of Defense Robert S. McNamara's seventh and last statement presented on Feb. 1, 1968, before a joint session of the Senate Armed Services Committee and the Senate Subcommitte on Department of Defense Appropriations on the FY 1969–73 Defense Program and the 1969 Defense Budget.*

While space limitations permit only an abbreviated treatment of the statement, an attempt has been made to excerpt those portions which are of special interest to defense industry. Using the method established in previous years, paragraph markings have been deleted from the original text for the sake of clarity.]

This is the seventh and final Five Year Defense Program and Financial Budget it will be my privilege to present to this Committee. Since there are a number of important basic policy issues which warrant a more extensive discussion, I have dropped from this year's statement some of the usual program detail. However, other Defense Department witnesses will be available to go into these matters in whatever depth you may desire.

As has been my practice in the past, I will attempt to call your attention to the more important changes in the Defense Program which have occurred since last year, particularly those relating to our effort in Southeast Asia.

Last year when I appeared before this Committee in support of the FY 1968 Budget I said, ". . . barring a significant change in the character or scope of the Southeast Asia conflict, or unforeseen emergencies elsewhere in the world, the FY 1967 Supplemental and FY 1968 Budget should be sufficient to cover our requirements until FY 1969 funds become available. . . ." A careful review of our financial requirements for the balance of FY 1968 has convinced me that we can still manage the program within the total obligational authority provided. However, to do so we will need authority to transfer a limited amount of funds among the various Defense Department appropriations. . . .

With regard to the FY 1969 Budget, I have again deleted all programs which can be safely deferred to a later time. In particular, our military construction request includes primarily those projects needed for support of our forces in Southeast Asia, for new weapon systems, and for the health and safety of our personnel. And, of course, we are continuing with undiminished vigor our cost reduction efforts.

. . . We are requesting for FY 1969 a total of $79.6 billion in new obligational authority. Expenditures are now estimated at $74.2 billion for FY 1968 (about $500 million more on a comparable basis, i.e., taking account of pay raises and the new budget concepts, than was estimated one year ago and several billion less than some have predicted in recent months) and $77.1 billion for FY 1969.

Assessment of the International Situation as It Bears on Military Policies and Programs

In the seven years since I first came before this Committee to testify on our defense programs, the military and economic strength of the United States and its allies has increased dramatically. But so have the difficulty and complexity of the problems we have had to face in framing our military policies. These years have seen the acceleration of a number of trends which will make the world of the 1970s very different from the world of the early 1960s. Today, as then, our military posture remains rooted in a commitment to collective defense. We and our allies are demonstrating this commitment every day in Vietnam. But today, and tomorrow, our country must be prepared to cope with a complex range of contingencies requiring forces and weapon systems with very diverse capabilities.

Since the early 1960s the divisions within the camp of our adversaries, already apparent then, have both deepened and widened. Indeed, there are now not simply two centers of Communism but several: Havana shows little inclination to follow the lead of Moscow or Peking, and is itself trying to exert a lead over the splintered Communist movements of the developing world. In Moscow, we still detect a desire to undermine the institutions of many nations and the influence of the United States. But we find this desire tempered by a prudence powerfully reinforced by a justly held fear of nuclear war.

At the same time that we find ourselves engaged in a conflict with North Vietnam and its South Vietnamese supporters to preserve the principle that political change must not be brought about by externally directed violence and military force, we find ourselves engaged in many forms of peaceful competition with other Communist states. In the world of the late 1940s and early 1950s, when our adversary seemed monolithic, such a situation would have been unimaginable. Yet today it would be as shortsighted for us to fail to seek peaceful accommodation (in those activities in which this may be possible) with the Soviet Union and its Eastern European allies as it would be for us to fail to maintain the credibility of our deterrent against Moscow's improved strategic systems—or to fail to resist aggression in Korea or Vietnam.

Thus, circumstances for which we must formulate our military policies have changed greatly from those of the early 1960s. But our goals remain the same. Fundamentally, what is at issue today—as it was a decade ago and as it will be a decade from now—is the kind of world in which we and others wish to live. When this nation made the decision at the end of World War II to base its own security on the principle of collective defense, it was with the hope that there could be created, in accordance with the principles of the United Nations Charter, a world in which even the smallest state could look forward to an independent existence, free to develop in its own way, unmolested by its neighbors, and free of fear of armed attack or political domination by the more powerful nations.

Some years later, in a world already familiar with the gap between Communist promise and Communist reality, and with Communist aggression as well, we sought to achieve this same high purpose by aligning ourselves with other like-minded nations in a series of multilateral and bilateral mutual defense treaties. By the close of 1955, this system of interlocking alliances had grown to include the Rio Treaty in the Western Hemisphere, NATO in Europe, SEATO and ANZUS in the Far East and bilateral mutual defense agreements with Korea, Japan, the Republic of China, and the Philippines—a total of some 40-odd sovereign nations bound together in an effort to defend their freedom and prevent the further extension of Communist influence and hegemony.

Looking back over the history of the last two decades, I believe it is fair to say that this system of alliances has substantially achieved its purpose. Although the record is less than perfect, the outward thrust of Soviet and Red Chinese aggression has been generally contained and the independence of even the smallest member of the alliances has been preserved. Beyond the immediate objective of these alliances, our adherence to a policy of collective defense has helped us to pursue our ultimate goal—the creation of a world order in which all states, small and large, aligned and unaligned, can preserve their independence and live in peace.

Collective security, however, has had its price. The members of the alliances have had to support large and costly military forces for many years, with small prospect of an early reduction. Moreover, we, and some of our allies, have had to pay a particularly high price, both in lives and in wealth, for the alliances' achievements—first in Korea during the early 1950s and now again in Southeast Asia. So, the American people have a right to ask: Were these achievements worth their cost, particularly in terms of their ultimate contribution to the peace and security of our own nation?

I believe they were. But this is a question which can never be answered conclusively; there is no way by which we can determine with certainty what the world and this country would have looked like today had we not based our national security policy on the principle of collective defense during the last 20-odd years. However, we do know that the policies of unarmed isolationism and attempted neutrality, which we followed prior to World War II, were in the end far more costly in lives and property.

Moreover, it must be clearly recognized that, while it is conceivable that we could return to a policy of isolationism, today this could no longer be the unarmed isolationism of the 1930s. In an age of nuclear weapons and intercontinental ballistic missiles, when other nations have the capability to strike our homeland a devastating blow with perhaps only a few minutes of warning, such an easy option is denied us.

Nevertheless, one could argue that we could still renounce all of our mutual defense treaties, pull back our military forces to our own soil, and build a "Fortress America" so powerful as to deter virtually any enemy or combination of enemies from deliberately attacking our territory. Then we could deal with the rest of the world on a strictly arms-length basis. But that would be an entirely different world than the one we now live in—and an entirely different United States as well! Without dependable friends or allies, we would surely have to maintain a larger military establishment than at present. We would also have to reorient our industry and commerce to achieve a maximum degree of economic self-sufficiency with a lower standard of living for our people, and considerably less economic freedom for all. Most important, we would be living in a far more uncertain and dangerous world, one in which our influence over the course of events would be greatly diminished. It would also be a world in which the pressures for proliferation of nuclear weapons and the means of their delivery would be much stronger than they are today. In time, we could find ourselves literally isolated, a "Fortress America" still relatively prosperous, but surrounded by a sea of struggling, envious and unfriendly nations—a situation hardly calculated to strengthen our own state of peace and security. Isolationism is clearly an undesirable alternative to our continued involvement in the responsibilities of world affairs and collective defense. This does not mean, however, that we must assume the role of "world policeman." But it does mean that we must be willing to continue to support those international arrangements which help to preserve world peace, alleviate conflicts among nations, and create conditions for economic and social progress in the less developed areas of the world.

I would hope that our allies and friends will similarly recognize that the new international situation is too complicated and threatening for any sudden abandonment by them of the collective defense of freedom and independence. The principle that every nation should feel secure in its independence is still valid, and it cannot easily be ignored in one part of the world and sustained in another. The contribution of individual nations to this goal can take many forms, and there is admittedly no precise way to determine any nation's fair share of the burden. We, on our part, must recognize that some of our friends and allies simply do not have the economic strength or industrial capacity to equip and maintain the armed forces they legitimately need; in fact, a few cannot even meet their military payrolls from their own resources. It is in the common interest that these nations be furnished the necessary financial and material support, not only by the United States, but also by the other more prosperous members of the alliances. There have been some encouraging moves in that direction, but too great a share is still being furnished by the United States.

Having said that other nations should do more in the common cause does not mean that I think we should do less, at least at the present time. The severe cuts made by the Congress last year in the Administration's economic and military aid request constitute a very serious setback to the entire collective defense effort. Moreover, the numerous limitations which were incorporated in the military aid legislation will seriously hamper the administration of the program and greatly complicate our relations with many of our allies. In this connection, I think it is of the utmost importance for us to remember that the non-Communist world is made up of sovereign states which have widely differing histories, capabilities, and political and economic orientations. Even where these states subscribe in principle to the policy of collective security, we should not expect that there will always be a unanimity of view as to how and by whom that policy should be implemented in any particular situation. Neither is it realistic for us to expect them all to share our scale of priorities. Each has its own particular set of local problems and national aspirations, and each will insist on judging for itself what is best for its people. We should, and do, try to guide them in areas where our joint interests are involved. And, we should, and do, try to ensure that what aid we give them is effectively used both from their point of view and ours. We do not, and should not, attempt to force our views upon them by unilateral coercion through trade and aid, for this is not the way to achieve the unity needed for the collective defense of the Free World.

However, I cannot help but feel that most of the restrictions and fund reductions imposed by the Congress on the national security program last year reflect a much more fundamental problem, and that is a growing unwillingness to face up to the fact that, if the policy of collective defense is to work, we must be ready to pay our share of the price of supporting it. If this is so, I must tell you in all candor that our nation will be much better off if we confront the real issue directly, and that is whether we should continue to base our national security on the policy of collective defense. There is nothing to be gained and much to be lost by paying lip service to the policy, and then failing to support the programs designed for its implementation.

That the American people have become somewhat disillusioned and weary with the problems of the rest of the world is readily understandable: for many years we have borne a large share of the burden of world peace and security, and of assistance to the developing nations. But we must never forget that of all nations we have the most at stake. The existence of an open, outward-looking, humane society in the United States depends upon the vitality of similar societies elsewhere. We must also never forget that our burden is large because our capacity is large—so much larger, in fact, than that of any other nation as to make comparisons misleading. For better or for worse—hopefully, for better—we are preeminent, with all of the obligations which accrue to leadership. So despite the rapidly increasing complexity of the world of the late 1960s and the 1970s, and the difficult choices it will pose for us, we must not in weariness or disillusionment abandon our international role, or neglect to face up to the real implications of new and old alternatives.

For my part, I am convinced that we will judge the alternatives to a continued dedication to collective defense to be unacceptable. I am also convinced that embracing the obligations of leadership will not force us to divert badly needed resources from the improvement of American domestic society. Our resources are sufficient, if wisely allocated, to meet the needs of the weak and the underprivileged both at home and abroad. For the sake of our security and our well-being, we can afford no less.

* * * * * *

Military Assistance and Sales

. . . In accord with the obvious sentiment of the Congress and the changed priorities imposed by the budgetary demands of the Vietnam conflict, our proposed FY 1969 grant military assistance request has been held to the lowest level since the inception of this program in FY 1950.

First priority has again been accorded to the "forward defense" countries on the Communists periphery. Programs have been deferred to the maximum extent feasible, and in some cases the amounts we propose for FY 1969 assume that U.S. materiel support can be shifted to a sales basis sooner and to a greater extent than we had heretofore planned. Provision has also been made in the FY 1969 program to support relations which ensure our continued access to important military facilities in certain countries, but the aid provided specifically for this purpose is minimal. Small but vital internal security oriented programs and modest training assistance account for virtually all of the remainder.

Thus, for FY 1969, our grant aid request totals only $420 million (compared with the $380 million appropriated by the Congress last year for the same purpose) plus $120 million to help finance military export sales. Of the $420 million requested for grant aid, $387 million would be for the forward defense countries of Korea, the Republic of China, the Philippines, Iran, Greece and Turkey. . . .

With respect to military export sales for FY 1969, we expect orders to total about $1.5 billion, about $0.3 billion less than the level currently expected for FY 1968. Of this total, we estimate government-to-government cash orders will amount to about $520 million, and that orders placed directly with U.S. industry will be about $430 million. The balance of $550 million will be government-to-government orders against credit arranged for or provided by the Defense Department.

Military export sales, I would like to remind you, are not an end in themselves. They are an integral and essential part of our collective defense and overall foreign policies. We are not in the business of selling arms, per se. In fact, during the period 1952–61, we furnished as grant aid several times more arms than we sold. We provided this military grant aid in the interest of the collective defense of the Free World. Now the relative proportion of grant aid and military sales has been reversed. But we continue to sell arms, today, both on a cash and credit basis, for the very same reason. Every arms transaction—whether it be grant aid, or a cash sale, or a credit sale—must meet the same fundamental test: Is it in the interest of collective defense and our overall foreign policy? Only then do we consider how it should be financed.

If a friendly nation requiring the arms is in a position to pay cash, certainly there would be no reason why we should not make the sale for cash. Where a nation has the economic capacity to pay for the arms over a longer period of time but cannot pay cash on delivery, it is only common sense to sell on credit. In those few cases where credit cannot be arranged through private banks without a government guaranty, it seems to me that it makes eminently good sense to facilitate the transaction by providing that guaranty. Finally, where a Free World nation needs military equipment or services but has no prospects of repaying the cost, or could do so only at unacceptable cost to its developmental programs, we should furnish the arms on a grant aid basis. But in every case the transaction must contribute to the collective defense of the Free World, or otherwise support our overall foreign policy.

Of course, the military export sales program helps our balance of payments position, but our difficulties in this area, in the first place, are attributable in very large measure to our efforts in behalf of collective defense. (I will discuss the balance of payments problem a little later.) However, this program helps to reduce the costs, both to our allies and ourselves, of equipping our forces, by minimizing costly duplicative development programs and by realizing the economics of larger scale production. And, it also helps to further cooperative logistics arrangements with our allies and standardization of our respective supply systems. Thus, there is a net gain for all.

As I pointed out last year, we have carefully circumscribed this program:

- We will not sell military equipment to a foreign country which we believe it cannot afford.
- We will never recommend that a potential foreign customer buy anything not truly needed by its own forces.
- We will not seek to sell a foreign country anything it can buy cheaper or better elsewhere in the Free World.

Every proposed sale of U.S. military equipment, whether it originates in commercial or government-to-government channels, is carefully viewed within the Executive Branch. Any significant proposal receives Cabinet level, and frequently Presidential, scrutiny before approval. Moreover, such approval is never forthcoming until a positive decision has been made that, all things considered, the sale is in the overall best interests of the United States and the purchaser. We have, in fact, turned down, cut back, or discouraged scores of prospective sales. The value of those turned down from the less developed countries by far exceeds the value of those approved. . . .

As indicated earlier in this statement, the tribulations suffered by both the grant and sales programs in the Congress last year should be of great concern to anyone who believes in the principle of collective defense. I hope that all members of this Committee will join in obtaining the public and Congressional understanding and support necessary for these vital adjuncts to our own direct military efforts.

Impact of the Defense Program on the Balance of Payments

. . . For the past several years, the Defense Department has conducted a comprehensive program to limit the impact of its activities on our balance of payments. The result of this effort through the last completed fiscal year is reflected in Figure 1 (page 6).

As you can see, excluding the impact of the conflict in Southeast Asia, we have been able to hold defense expenditures abroad to the 1961 level, notwithstanding substantial increases in wages and prices. (For example, between 1961 and 1966 wages in Germany rose 52 percent and in Japan by 61 percent; during the same period the cost of living in Germany rose 16 percent and in Japan by 34 percent.) After the net adverse balance on the "Defense" account (shown on the last line) had been reduced from $2.8 billion in FY 1961 to $1.5 billion in FY 1965, it rose again to $2.3 billion in FY 1967. This rise is almost completely attributable to the extraordinary foreign exchange costs of the Vietnam conflict, which amounted to $1.5 billion in FY 1967. Indeed, if not for the Vietnam conflict our net adverse balance in FY 1967 would have been only $0.8 billion, compared with $2.8 billion in FY 1961, due in large measure to the increase in receipts from foreign military sales.

In this connection. I should caution that the high level of receipts in FY 1967 was unusual and will almost certainly not be repeated this year or next. The amount realized last year benefited from a bunching of receipts from our recent offset arrangement with the Federal Republic of Germany. That arrangement, under which Germany offset the bulk of foreign exchange costs of our deployments in that country by making equivalent purchases of U.S. military goods and services, has now run its course. To provide a partial offset during the current fiscal year, Germany has agreed to purchase a half billion dollars of U.S. Government medium-term securities. We are now working with the Treasury and other government agencies to develop similar arrangements for the future, not only with Germany, but with other countries as well.

In past years I have described in some detail the many specific actions we have taken to curtail overseas military spending. Every measure which offered some prospect of help in this regard has been thoroughly investigated. Wherever we found that they could be implemented without impairing required combat capabilities or imposing undue hardship on the individual serviceman or his dependents, this has been done.

However, in view of the continued deterioration in our payments position, which has resulted in the decision to impose strong controls on private investment abroad and to seek a major reduction in overseas tourist spending, we are again reviewing our current efforts to see where they may be intensified. In this regard, we have long since exhausted the "easy" opportunities for savings and any new savings will be most difficult. Clearly, the best hope of reducing our foreign exchange spending would be a substantial reduction in U.S. overseas deployments. For the immediate future, this does not appear to be a likely prospect. Southeast Asia deployments in FY 1968 and FY 1969 are scheduled to rise above the average for FY 1967. This fact, coupled with the likelihood of higher prices, civilian wages and military compensation, and the lower military sales receipts now projected means that we must expect a further rise in the net adverse balance on the "Defense" account for this year and next. Nevertheless, considering the "belt tightening" now being undertaken by other elements of our economy, we must seek new ways to reduce the foreign exchange impact of spending by U.S. forces abroad. We also intend, consistent with the overall arms sale policies which I have just discussed, to urge our allies to procure U.S. weapons and other military equipment wherever feasible.

Concluding Remarks on the International Situation

In presenting to this Committee the Defense Department's Budget request for the last fiscal year of the 1960s, I believe it is not inappropriate to reflect for a moment on the very great changes which have occurred in the world during the past decade. These years have seen the acceleration of a number of trends which will make the international environment of the 1970s markedly different from that of the 1950s and early 1960s.

In the 1960s the simple bi-polar configuration which we knew in the earlier post-World War II period began to disintegrate. Solid friends and implacable foes are no longer so easy to label, and labels which did useful service in the past, such as "Free World" and "Iron Curtain," seem increasingly inadequate as descriptions of contending interests within and between blocs, and of the new bonds of common interest being slowly built across what were thought to be impenetrable lines of demarcation. Yet this tendency toward a more pluralistic world, which is in our interest and consistent with our national philosophy, is still only a tendency. Within many nations the factions who see advantage in constructively exploiting this tendency are weak. Part of our job is to make it evident to potential adversaries that this more pluralistic world would have rewards for them also. But to make our case we must still face them with the prospect of encountering a well coordinated alliance of nations willing to do battle to preserve their rights to independence and self-determination. Despite the emerging multipolarity of power and the decline of simplistic Cold War ideologies, collective security arrangements are still a necessity. The strong must still make commitments to defend the weak from those who would force a political and economic order upon them.

Thus collective security remains the foundation of our defense policy. Ultimately, however, true international security will be found only in proper relations among states, not in hardware. This was my theme at Montreal two years ago, and I would emphasize it again now. If we look ahead toward the last quarter of the 20th Century, the world's overwhelming security problem will be the establishment of a proper relationship between the developed and well fed societies and those which are hungry and neglected. This relationship will have to include a collective effort by the modern, technologically efficient, developed world to help the underdeveloped world to a decent existence. That task will require the devotion of political and economic efforts far surpassing any in which we now engage.

To provide the needed effort, the developed world will have to compose its internal differences by agreement, not by coercion, and to organize itself for the common job to be done. It seems the lesson of human history that nations will join together effectively for such great efforts only when a common danger to their security is perceived. We must do our best to prepare ourselves and our friends, and even those who think of themselves as our adversaries, for the day when they perceive the common potential danger to our security of a hungry, angry, dissatisfied, and impatient majority of mankind. We in the United States must stand ready to cooperate in all those areas in which progress toward a safe, more human global order can be made. Our security, and the quality of life within the United States, demand it.

U.S. Military Balance of Payments

($ Billions)

EXPENDITURES (on Def. Acct.)	FY 1961	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967
U.S. Fcs. and their Spt. (Excl. Incr. in SEA Exp. over FY 61)	2.5	2.4	2.4	2.5	2.3	2.4	2.5
Military Assistance	.3	.2	.3	.2	.2	.2	.1
Other (AEC, etc.)	.3	.3	.3	.1	.1	.1	*
TOTAL	3.1	3.0	3.0	2.8	2.6	2.7	2.6
RECEIPTS (on Def. Acct.)	– .3	– .9	–1.4	–1.2	–1.3	–1.2	–1.8
NET ADVERSE BALANCE (Excl. Incr. in SEA Exp. over FY 61)	2.8	2.1	1.6	1.6	1.3	1.5	.8
Increase in SEA Exp. over FY 61		*	.1	.1	.2	.7	1.5
NET ADVERSE BALANCE	2.8	2.1	1.7	1.7	1.5	2.2	2.3

* Less than $50 million.

Figure 1.

Strategic Forces

The forces and programs included under this heading, i.e., the strategic offensive forces, the strategic defensive forces, and the civil defense program, constitute the foundation of our general nuclear war capabilities and are accordingly treated in this section of the statement as an integrated whole.

The General Nuclear War Problem

Over the past seven years, in my annual appearances before this Committee, I have attempted to explore with you in a systematic way all of the major elements of the general nuclear war problem—the nature of strategic nuclear war; the size and character of the forces likely to be involved; the technical feasibility, cost and probable outcomes of alternative strategies; and the principal policy and program choices opened to us and our allies. I have done so because I believe a common understanding of all of these factors is essential to an informed and reasoned discussion of the crucial decisions which we in the Executive Branch and you in the Congress must make each year in this most vital area of our defense program.

This is not to say that the need for consideration of the general nuclear war problem had been overlooked prior to 1961, or that I and my associates clearly understood, or even perceived, all of the multi-faceted aspects of this vastly complex problem from the very outset. Quite the contrary, many of the fundamental concepts and insights which underlie our nuclear policies and programs today were developed prior to 1961, and my own views have matured and become more precise since that time. Indeed, many of the issues which came to a head in 1961 had been debated for years. All needed to be resolved so that we could get on with the job of reshaping our strategy and our forces for the decade of the 1960s.

It seemed to us in 1961 that one of the first things we had to do was to separate the problem of strategic nuclear war from that of all other kinds of war. Although the matter had long been debated, the fact that strategic nuclear forces, no matter how versatile and powerful they may be, do not by themselves constitute a credible deterrent to all kinds of aggression had still to be squarely faced. . . .

Many of the tasks we set out for ourselves seven years ago have been successfully accomplished. But, the situation which we foresaw then is now well upon us. The Soviets have, in fact, acquired a large force of ICBMs installed in hardened underground silos. To put it bluntly, neither the Soviet Union nor the United States can now attack the other, even by complete surprise, without suffering massive damage in retaliation. This is so because each side has achieved and will most likely maintain over the foreseeable future, an actual and credible second strike capability against the other. It is precisely this mutual capability to destroy one another, and, conversely, our respective inability to prevent such destruction, that provides us both with the strongest possible motive to avoid a strategic nuclear war.

That we would eventually reach such a stage had been clearly foreseen for many years. Five years ago I pointed out to this Committee that: "We are approaching an era when it will become increasingly improbable that either side could destroy a sufficiently large portion of the other's strategic nuclear force, either by surprise or otherwise, to preclude a devastating retaliatory blow."

In January 1956, Secretary of Defense Wilson noted that, ". . . independent of what year it might happen, within a reasonable number of years we are almost bound to get into a condition sometimes described as 'atomic plenty' or a condition where the two parties could, as a practical matter, destroy each other." In the following month, Secretary of the Air Force Quarles was even more explicit. He said, "I believe it will mean that each side will possess an offensive capability that is so great and so devastating that neither side will have a knockout capability, and, therefore, a situation in which neither side could profitably initiate a war of this kind. . . . This has been frequently referred to as a position of mutual deterrence, and I believe we are moving into that kind of a situation."

Indeed, as far back as February 1955, a distinguished group of scientists and engineers, frequently referred to as the Killian Committee, had concluded on the basis of a comprehensive study of our continental air defense that within probably less than a decade a nuclear attack by either the United States or the Soviet Union would result in mutual destruction. "This is the period," the Committee's report stated, "when both the U.S. and Russia will be in a position from which neither country can derive a winning advantage, because each country will possess enough multimegaton weapons and adequate means of delivering them, either by conventional or more sophisticated methods, through the defenses then existing. The ability to achieve surprise will not affect the outcome because each country will have the residual offensive power to break through the defenses of the other country and destroy it regardless of whether the other country strikes first."

Clearly, nothing short of a massive pre-emptive first strike on the Soviet Union in the 1950s could have precluded the development of the situation in which we now find ourselves. This point, too, was noted by Secretary McElroy in 1958. Indeed, the hearings of the Congressional Committee concerned with national defense during that period are replete with references to this crucial issue.

Be that as it may, the problem now confronting the nation is how best to ensure our safety and survival in the years ahead, in an era when both we and the Soviet Union will continue to have large and effective second strike strategic offensive forces, and when the Red Chinese may also acquire a strategic nuclear capability.

I believe we can all agree that the cornerstone of our strategic policy must continue to be the deterrence of a deliberate nuclear attack against either the United States or its allies. But this immediately raises the question, what kind and level of forces do we need to ensure that we have such a deterrent, now and in the foreseeable future?

Having wrestled with this problem for the last seven years, I am convinced that our forces must be sufficiently large to possess an "Assured Destruction" capability. By this I mean an ability to inflict at all times and under all foreseeable conditions an unacceptable degree of damage upon any single aggressor, or combination of aggressors—even after absorbing a surprise attack. One can add many refinements to this basic concept, but the fundamental principle involved is simply this: it is the clear and present ability to destroy the attacker as a viable 20th Century nation and an unwavering will to use these forces in retaliation to a nuclear attack upon ourselves or our allies that provides the deterrent, and not the ability partially to limit damage to ourselves.

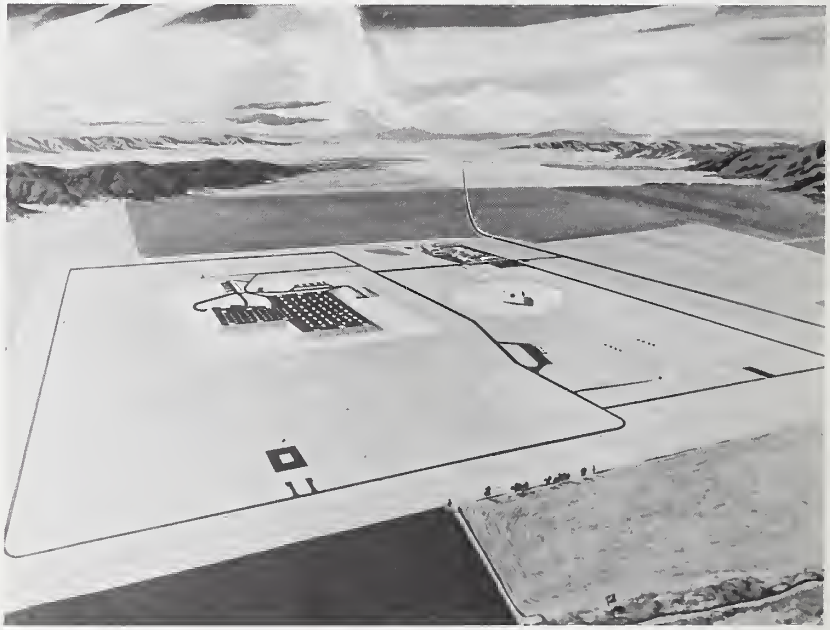
This is not to say that defense measures designed to significantly limit damage to ourselves (which is the other major objective of our strategic forces) might not also contribute to the deterrent. Obviously, they might—if an increase in our "Damage Limiting" capability could actually undermine our opponents confidence in his offensive capability. But for a Damage Limiting posture to contribute significantly to the deterrent in this way, it would have to be extremely effective, i.e., capable of reducing damage to truly nominal levels—and as I will explain later, we now have no way of accomplishing this.

As long as deterrence of a deliberate Soviet (or Red Chinese) nuclear attack upon the United States or its allies is the vital first objective of our strategic forces, the capability for Assured Destruction must receive the first call on all of our resources and must be provided regardless of the costs and the difficulties involved. That imperative, it seems to me, is well understood and accepted by all informed Americans. What is not so well understood, apparently, is the basis upon which our force requirements must logically be determined—in other words, how much Assured Destruction capability do we need and what is the proper way to measure that need?

The debate on how much is enough, I suspect, is as old as war itself, but it acquired a new and very special significance with the advent of the atomic bomb. . . .

As I have explained to the Committee in previous years, this question cannot be answered precisely. Some people have argued that the Soviet or Red Chinese tolerance of damage would be much higher than our own. Even if this were true (which is debatable), it would simply mean that we must maintain a greater Assured Destruction capability. For example, if we believe that a 10 percent fatality level would not deter them, then we must maintain a capability to inflict 20 or 30 percent, or whatever level is deemed necessary. In the case of the Soviet Union, I would judge that a capability on our part to destroy, say, one-fifth to one-fourth of her population and one-half of her industrial capacity would serve as an effective deterrent. Such a level of destruction would certainly represent intolerable punishment to any 20th Century industrial nation.[a]

The next question which has to be answered is: What kind and how large a force do we need to ensure at all times and under all foreseeable conditions that we can inflict the desired level of damage on the attacker? Obviously, the number of strategic missiles and aircraft we need cannot be determined solely on the basis of some fixed ratio to the number our opponents might have or, for that matter, to the number of nuclear war-



Sketch of one possible tactical site of anti-ballistic missile system.

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[a] *Red China represents a somewhat different problem. Today Red China is still far from being an industrial nation. What industry it has is heavily concentrated in a comparatively few cities. We estimate, for example, that a relatively small number of warheads detonated over 50 Chinese cities would destroy half of the urban population (more than 50 million people) and more than one-half of the industrial capacity. And, as I noted last year, such an attack would destroy most of the key governmental, technical, and managerial personnel, as well as a large proportion of the skilled workers. Since Red China's capacity to attack the United States with nuclear weapons will be very limited at least through the 1970s, the ability of even so small a portion of our strategic forces to inflict such heavy damage upon them should serve as a major deterrent to a deliberate attack on us by that country.*

heads or the gross megatonnage those weapons could carry. Certainly, these are very important factors, each in its own right, and they must be and are taken into account in our calculations. But these are not the only or even most important factors. The requirement for Assured Destruction forces can be determined logically only on the basis of the size and character of the target system they may be called upon to destroy, taking account of all of our weapons which at any given time are ready to be launched toward their targets; the number of these which could be expected to survive a Soviet surprise first attack; and the number of the "ready," "surviving" weapons which can reasonably be expected to reach the objective area, survive the enemy defenses, and detonate over or on their intended targets.

Thus, a logical determination of strategic force requirements involves a rather complex set of calculations. You may recall that when I appeared here six years ago in support of our first Five Year Defense Program, I described the steps of this process in some detail.

In view of the misunderstandings which have arisen over the issue, I believe it might be useful to restate them here.

The first step is to determine the number, types and locations of the aiming points in the target system.

The second step is to determine the numbers and explosive yields of weapons which must be delivered on the aiming points to ensure the destruction or substantial destruction of the target system.

The third step involves a determination of the size and character of the forces best suited to deliver these weapons, taking into account such factors as size of warhead, system reliability, delivery accuracy, ability to penetrate enemy defenses, and cost.

Since we must be prepared for a first strike by the enemy, allowances must also be made in our calculations for the losses which our own forces would suffer from the initial enemy attack. This, in turn, introduces additional factors:

- The size, weight, and effectiveness of a possible enemy attack.
- The degree of vulnerability of our own strategic weapon systems to such an attack.

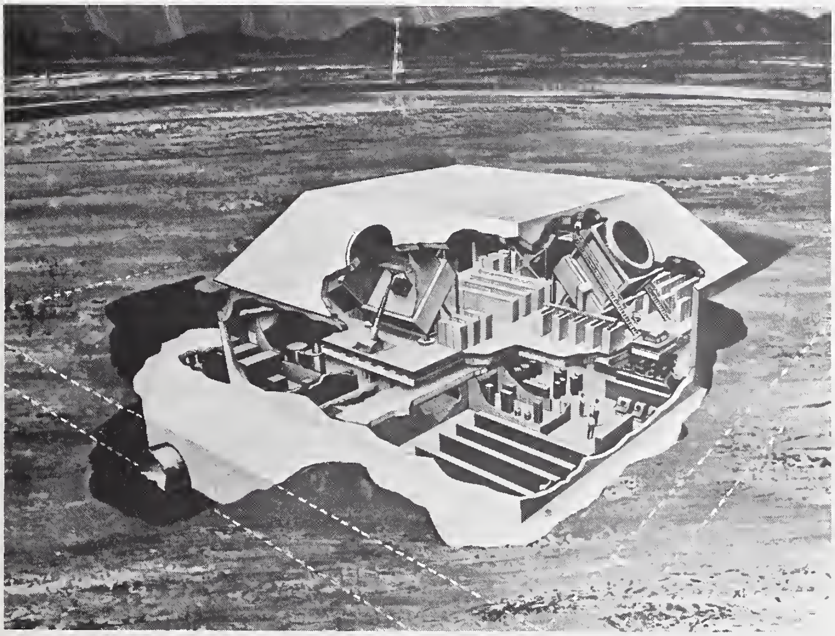
Clearly, each of these factors involves various degrees of uncertainty. But these uncertainties are not unmanageable. By postulating various sets of assumptions, ranging from optimistic to pessimistic, it is possible to introduce into our calculations reasonable allowances for these uncertainties. For example, we can use in our analysis both the higher and lower limits of the range of estimates of the number of enemy ICBMs and long-range bombers. We can assign to these forces a range of capabilities as to warhead yield, accuracy, reliability, etc.

With respect to our own forces, we can establish, within reasonable limits, the degree of reliability, accuracy and vulnerability of each type of offensive weapon system and its ability to penetrate the enemy defenses under various modes of operation. The last factor also involves an estimate of the size and character of the enemy's defenses.

Obviously, a change in any major element of the problem necessitates changes in many other elements. For example, the Soviet's deployment of a very extensive air defense system during the 1950s forced us to make some very important changes in our strategic bomber forces. The B–52s had to be provided with penetration aids—i.e., standoff missiles, decoys, electronic countermeasure equipment, etc. In addition, the B–52's airframe had to be substantially strengthened to permit sustained low-altitude operations.

Now, in the late 1960s, because the Soviet Union might deploy extensive anti-ballistic missile (ABM) defenses, we are making some very important changes in our strategic missile force. Instead of a single large warhead, our missiles are now being designed to carry several small warheads and penetration aids, because it is the number of warheads, or objects which appear to be warheads to the defender's radars, that will determine the outcome in a contest with an ABM defense.

Gross megatonnage is not a reliable indicator of the destructive power of an offensive force. For example, one missile carrying 10 50-kiloton warheads (a total yield of ½–megaton) would be just as effective against a large city (2,000,000 people) as a single 10-megaton warhead with 20 times the total yield. Against smaller cities (100,000 people) 10 50-kiloton warheads would be three and one-half times as effective as the single 10-megaton warhead, and against airfields 10 times as effective. Even against hard ICBM sites, the 10 50-kiloton warheads would (given the accuracy we anticipate) be more



Artist's concept of missile site radar (MSR) shown in cutaway.

effective than a single 10-megaton warhead. And, of course, it would take 10 times as many ABM interceptors to defend a city against 10 50-kiloton warheads as it would against a single 10-megaton warhead.

It is clear, therefore, that gross megatonnage is an erroneous basis on which to compare the destruction capability of two forces. And as I pointed out to the Committee last year, the number of missiles on launchers alone is not a much better measure. Far more important is the surviving number of separately targetable, serviceable, accurate, reliable warheads. But the only true measure of relative effectiveness of two Assured Destruction forces is their ability to survive and to destroy the target systems they are designed to take under attack.

In terms of numbers of separately targetable, survivable, accurate, reliable warheads, our strategic forces are superior to those of the Soviet Union. But I must caution that in terms of national security, such "superiority" is of little significance. For even with that "superiority," or indeed with any "superiority" realistically attainable, the blunt, inescapable fact remains that the Soviet Union could still effectively destroy the United States, even after absorbing the full weight of an American first strike.

We should be under no illusion that Damage Limiting measures, regardless of how extensive they might be, could, by themselves, change that situation. This is so for the same reason that the deployment by the Soviets of a ballistic missile defense of their cities will not improve their situation. We have already taken the necessary steps to guarantee that our strategic offensive forces will be able to overcome such a defense. Should the Soviets persist in expanding what now appears to be a light and modest ABM deployment into a massive one, we will be forced to take additional steps. We have available the lead time and the technology to so increase both the quality and the quantity of our strategic offensive forces—with particular attention to more sophisticated penetration aids—so that this expensive Damage Limiting effort would give them no edge in the nuclear balance whatsoever. By the same token, however, we must realistically assume that the Soviet Union would take similar steps to offset any threat to their deterrent that might result from our deploying an ABM defense of our own cities.

Under these circumstances, surely it makes sense for us both to try to halt the momentum of the arms race which is causing vast expenditures on both sides and promises no increase in security. The logic of discussions to limit offensive and defensive strategic weapons is even more compelling than it was a year ago when the President proposed such discussions to the Soviet Union. We are continuing our attempt to persuade the Soviets to agree to our proposal for discussions.

It is important to distinguish between an ABM system designed to protect against a Soviet attack on our cities and an ABM system designed for other purposes. One such purpose would be to provide greater protection for our strategic offensive forces; another would be to protect our cities against an attack by Red China. The first is not a Damage Limiting measure, but rather an action designed to strengthen our Assured Destruction capability by ensuring the survival of a larger proportion of our retaliatory forces. The second is a Damage Limiting measure, but one against a small force—because of the size and character of the attacks involved, a good defense becomes feasible.

As I noted last year, Red China may achieve an initial ICBM operational capability in the early 1970s and a modest force in the mid-1970s. Depending upon the rate of growth thereafter, a thin ABM deployment, with some additions and improvements, could be highly effective through the mid-1980s. The ability of the thin ABM to limit damage to our nation in the event our offensive force failed to deter an "irrational" aggressor was the basis for our decision to deploy such a force.

Before I discuss the analytical basis for these conclusions and our specific program proposals, I would first like to present the latest estimates of the strategic threat.

The Size and Character of the Threat

Each year in presenting our projections of the strategic nuclear threat to the United States, I have cautioned that, while we have reasonably high confidence in our estimates for the closer-in period, our estimates for the more distant years are subject to considerable uncertainty. This is still the case with regard to our current projections. The estimates through 1969 are reasonably firm. Beyond that point they become progressively less firm, especially where they deal with the period beyond the production and deployment lead times of the weapon systems involved.

The Soviet Strategic Offensive-Defensive Forces

Summarized in Figure 1 are the Soviet strategic offensive forces estimated for Oct. 1, 1967. The programmed U.S. forces for those same dates are shown for comparison.

U.S. vs Soviet Intercontinental Strategic Nuclear Forces

	1 Oct 1967	
	U.S.[a]	USSR
ICBM LAUNCHERS[b]	1054	720
SLBM LAUNCHERS[c]	656	30
Total Intercont'l Msl. Launchers	1710	750
INTERCONTINENTAL BOMBERS[d]	697	155
Total Force Loadings—Approx. No. of Warheads	4500	1000

[a] These are mid-1967 figures.

[b] Excludes ICBM test range launchers which could have some operational capability against the U.S. Soviets also have MR/IRBMs capable of striking Eurasian targets.

[c] In addition to the SLBMs on nuclear-powered submarines the Soviets also have SLBMs on diesel-powered submarines whose primary targets are believed to be strategic land targets in Eurasia. The Soviets also have submarine-launched cruise missiles whose primary targets we believe to be naval and merchant vessels.

[d] In addition to the intercontinental bombers, the Soviets have a force of medium bombers/tankers capable of striking Eurasian targets.

Figure 1.

Intercontinental Ballistic Missiles. Over the past year, the Soviets have continued their buildup of hardened and dispersed land-based missiles. We estimate that, as of Oct. 1, 1967, they had a total of 720 ICBM launchers operational compared to 340 a year earlier. We believe the Soviet ICBM force will continue to grow over the next few years, but at a considerably slower rate than in the recent past.

As you may recall, I announced last November that the Soviets were intensively testing what we believe to be a Fractional Orbit Bombardment System (FOBS). Such a system, which is really an ICBM of different trajectory, could be launched on a very low trajectory across the northern approaches of the United States, thus reducing the possibility of timely detection by the Ballistic Missile Early Warning System (BMEWS); or, alternatively, around the southern approaches which are not covered by BMEWS. In either event, the weapon would not have a very high order of accuracy and would have to pay a heavy penalty in payload. It would, therefore, be useful primarily against soft targets. Although years ago we considered and rejected such a system for our own use, the Soviets may believe it to be useful in a surprise nuclear strike against our bomber bases or as a penetration tactic against ABM systems. Later, in my discussion of the defensive programs, I will touch on some of the measures we have taken in anticipation of that type of threat.

Anti-Ballistic Missile Defense. Last year I noted that in addition to the Galosh system around Moscow, the Soviets were deploying another type of defensive system elsewhere in the Soviet Union. I cautioned, however, that the weight of the evidence at the time suggested that this system was not intended primarily for ABM defense. Now, I can tell you that the majority of our intelligence community no longer believes that this so-called "Tallinn" system (which is being deployed across the northwestern aproaches to the Soviet Union and in several other places) has any significant ABM capability. This system is apparently designed for use within the atmosphere, most likely against an aerodynamic rather than a ballistic missile threat.

Although construction of the Galosh ABM system around Moscow is proceeding at a moderate pace, no effort has been made during the last year to expand that system or extend it to other cities. It is the consensus of the intelligence community that this system could provide a limited defense of the Moscow area but that it could be seriously degraded by sophisticated penetration aids. Nevertheless, knowing what we do about past Soviet predilections for defensive systems, we must, for the time being, plan our forces on the assumption that they will have deployed some sort of an ABM system around their major cities by the early 1970s.

Red Chinese Nuclear Threat

Our current estimates of the Red Chinese nuclear threat are essentially the same as those I presented here last year. The Chinese have the manpower and industrial capabilities required for the deployment of ballistic missiles, and we believe that they are making an intensive effort to develop a medium range missile. We estimate that the first of these missiles could be deployed as early as 1967–68 and that by the mid-1970s, they could have a modest force operational.

With regard to ICBMs, we continue to believe that the Chinese nuclear weapons and ballistic missile development programs are being pursued with a high priority. However, it is now clear that they failed to conduct either a space or a long-range ballistic missile launching before the end of 1967, as we thought possible last year. We still believe such a launching could be made on relatively short notice. In any event, our estimate last year that it appeared unlikely the Chinese could achieve an initial operational capability with an ICBM before the early 1970s, or deploy a significant number of operational ICBMs before the mid-1970s, still holds. And, of course, those ICBMs would not have a very high degree of reliability, speed of response, or protection against attack.

The Red Chinese also have several types of aircraft which could carry nuclear weapons, but most of them have a limited operational radius and none have an intercontinental radius. It is highly unlikely on the basis of cost alone that they would undertake the development, production and deployment of an intercontinental bomber force. If they chose to do so, it would take them a decade or more before they could deploy such a force.

Capabilities of the Proposed U.S. Forces for Assured Destruction

As I noted earlier, the only true measure of the effectiveness of our Assured Destruction forces is their ability, even after absorbing a well coordinated surprise first strike, to inflict unacceptable damage on the attacker. In this next portion of my statement, I would like to examine with you our latest analyses of how well our strategic forces can be expected to accomplish that mission: first, against the "highest expected threat" projected in the latest National Intelligence Estimates (NIE) and, second, against a Greater-Than-Expected Threat.[b]

Capability Against the "Highest Expected Threat" in the NIE

Even if the Soviet strategic forces by 1972 reach the higher end of the range of estimates projected in the latest NIEs, and even if they were to assign their entire available missile force to attacks on our strategic forces (reserving only refire missiles and bomber-delivered weapons for urban targets), about one-half of our forces programmed for 1972 would survive and remain effective. If the Soviets expand the Moscow ABM defense and deploy the same or a similar system around other cities at the highest rate projected in the latest NIEs, about three-quarters of our surviving weapons would detonate over their targets. The destructive potential of such a U.S. retaliatory attack is illustrated by Figure 2 (page 12).

Even if the Soviets deploy a substantial number of ABM interceptors by 1972, our strategic missile forces alone could still destroy more than two-fifths of their total population

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[b] *The "highest expected threat" is actually composed of the upper range of NIE projections for each element of the Soviets' strategic forces. In many cases, these represent alternatives and it is highly unlikely that all elements would ever reach the top end of the quantitative range simultaneously. Therefore, the "highest expected threat" is really greater than that projected in the NIE.*

(more than 100 million people), and over three-quarters of their industrial capacity. As Figure 3 demonstrates, beyond 400 one-megaton equivalents optimally delivered, further increments would not meaningfully change the amount of damage inflicted because we would be bringing smaller and smaller cities under attack.

These results, of course, reflect the decisions we have taken in recent years to enhance the future capabilities of our Assured Destruction forces, including:

- The production and deployment of the Poseidon missile with Multiple Independent Reentry Vehicles (MIRV).
- The production and deployment of improved missile penetration aids.
- The increase in the proportion of Minuteman IIIs (with MIRVs and a new improved third stage) in the planned force.
- The initiation of development of new small reentry vehicles in order to increase substantially the number of warheads (or penetration aids) which can be carried by a single missile.
- The development and production of Short Range Attack Missiles (SRAM) for our strategic bombers.

These and other measures will not only enhance the survivability of our strategic missile forces but will also greatly increase the number of weapons which we could place over the Soviet Union in 1972. As I stated earlier, numbers of weapons will be much more important in the future than gross megatonnage. Our calculations show that, even if the Soviets deploy a substantial number of ABMs by 1972, our offensive forces (after absorbing a surprise attack) would still be able to inflict about the same percent fatalities on the Soviet population in a second strike in 1972 as they could have in 1966.

Indeed, if the Soviet offensive-defensive threat does not increase beyond the highest level now projected through 1972 in the latest National Intelligence Estimates, we will have more Assured Destruction capability than we will probably need. However, I have repeatedly cautioned that our Assured Destruction capability is of such crucial importance to our security that we must be prepared to cope with Soviet strategic threats which are greater than those projected in the latest intelligence estimates. Accordingly, we must continually reexamine the various actions, beyond those which now seem probable, by which the Soviets might seek to strengthen their strategic forces and take appropriate steps in a timely manner to hedge against them.

Capability Against Greater-Than-Expected Threats

As was the case last year, the most severe threat we must consider in planning our Assured Destruction forces is a Soviet deployment of a substantial hard target kill capability in the form of highly accurate small ICBMs or MIRVed large ICBMs, together with an extensive, effective ABM defense. A large Soviet ICBM force with a substantial hard target kill capability might be able to destroy a large number of our Minuteman missiles in their silos. An extensive, effective Soviet ABM defense might then be able to intercept and destroy a large part of our residual missile warheads, including those carried by submarine-launched missiles. In combination, therefore, these two actions could conceivably seriously degrade our Assured Destruction capability.

Again, I want to remind you that both of these threats are quantitatively far greater than those projected in the latest intelligence estimates. Moreover, we believe that the accuracy of Soviet ICBMs is still substantially inferior to that of our own missiles. Nevertheless, even though such a threat is extremely unlikely, we have taken account of the possibility in our longer range force planning.

Our calculations show that against either one of the Soviet Greater-Than-Expected Threats, the offensive or the defensive threat, the presently programmed forces could still perform their mission through the mid-1970s.

Against the massive and highly unlikely combined Greater-Than-Expected Offensive and Defensive Threats, these same forces with Poseidon missiles carrying a full load of warheads and with bomber penetration aids (options which we could exercise in FY 1970) could still destroy in a second strike (depending

Soviet Population and Industry Destroyed

(Assumed 1972 Total Population of 247 Million; Urban Population of 116 Million)

1 MT Equiv Delivered Warheads	Total Population Fatalities Millions	Total Population Fatalities Percent	Industrial Capacity Destroyed (Percent)
100	37	15	59
200	52	21	72
400	74	30	76
800	96	39	77
1200	109	44	77
1600	116	47	77

Figure 2.

U.S. Fatalities from a Chinese First Strike, 1970s

	(Number of Chinese ICBMs) X	2.5X	7.5X
U.S. Fatalities (in millions)			
Without Sentinel	7	11	15
With Sentinel	[a]	[a]	1

[a] Fewer than one million U.S. dead with some probability of no deaths.

Figure 3.

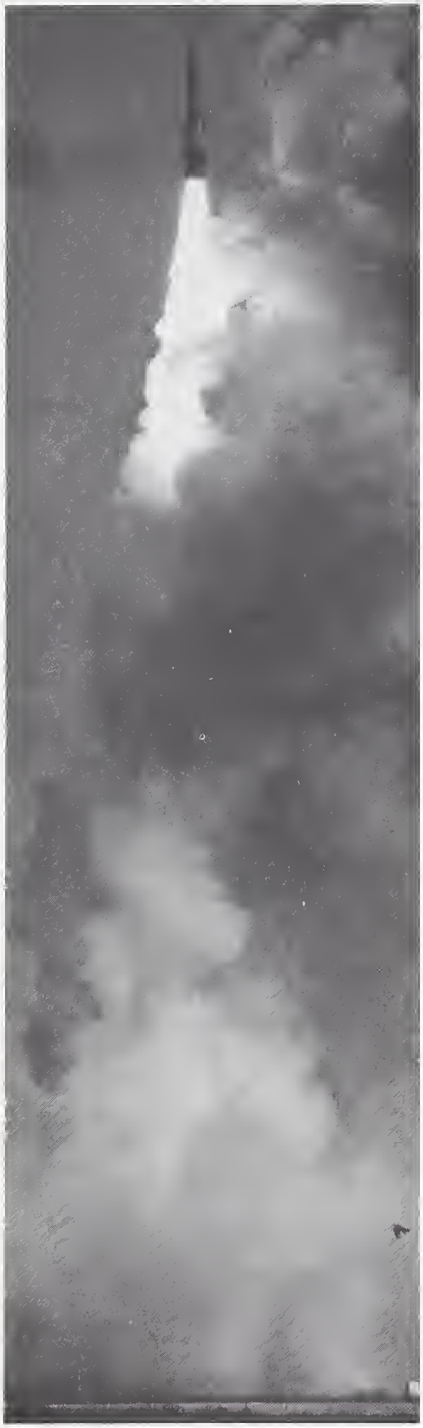
upon how we target our forces) about 18 to 25 percent of the population and two-thirds to three-quarters of the industrial capacity of the Soviet Union, even after absorbing a surprise attack. The prospect of having to absorb losses of this magnitude from a U.S. retaliatory strike should, in itself, poses a very substantial deterrent to the Soviet Union. Nevertheless, for the purpose of planning our forces so far ahead, this level of damage may become too low for complete confidence in our deterrent. Accordingly, prudence dictates that we act now to place ourselves in a position to strengthen our Assured Destruction capabilities in the unlikely event that both of the Greater-Than-Expected Threats actually begin to emerge.

Fortunately, we have a large number of additional options from which we can draw to strengthen those capabilities by the mid-1970s. We can convert the entire force to Minuteman III, increase the number of warheads each Minuteman missile could carry, emplace the entire Minuteman III force in superhard silos, and/or protect the Minuteman force with an ABM defense.

There are, of course, still other options available, such as the construction and deployment of more Poseidon submarines, and the development and production of a new land-based missile. Although a new land-based ICBM does not appear to offer any particular advantage over the Minuteman III in superhard silos, I believe we should keep that option open by starting development now of a silo which could be used for either the Minuteman III or a new ICBM. The options of defending Minuteman with the ABM and of constructing more Poseidon submarines will continue to be available for some time into the future and neither requires a commitment at this time.

As I noted in previous years, under certain circumstances there may be some advantage in maintaining a mixed offensive force of missiles and a limited number of bombers. By having a capability to attack some cities with missiles only, and others with bombers only, we can force the Soviet Union to maintain defenses against both. But to do this, we do not need either a very large bomber force or a new bomber. The present program provides for a mixed force of missiles and bombers into the later part of the 1970s, and the options open to us will permit extending the life of the bomber force and increasing its capability, and/or the addition of a new bomber, should threats greater than that projected by the NIE develop.

Against the Greater-Than-Expected Threat, any bomber force ought to be equipped with improved penetration aids to cope with the kind of anti-bomber defense systems postulated in this threat. We have no evidence the Soviets are actually deploying such systems, although they are developing new, high performance fighter aircraft. Nevertheless, we should keep the options open to upgrade our presently programmed bomber force and to deploy a new bomber if one should eventually be required. But the pacing items at the present time are the penetration aids, particularly those needed to counter the improved interceptors the Soviets may deploy in the future, and these are the programs which should receive our first attention regardless of which option we may ultimately choose to exercise.


Minuteman missile.

Again, may I remind you that all of these missile and bomber options are directly related to the combined Greater-Than-Expected Threat and, until we have some evidence that this threat is actually beginning to emerge, we need not and should not decide to deploy any of these systems. Instead, we should carefully time our actions on all of them in step with the development of the threat, keeping in mind the various development, production and deployment leadtimes involved.

Capabilities of the Proposed Forces for Damage Limitation

There are two major issues this year in the Damage Limitation portion of the Strategic Forces Program. The first concerns the deployment of an anti-ballistic missile defense and, the second, the future size and composition of the anti-bomber defense forces.

Anti-Ballistic Missile Defense

Last year I presented to you in considerable detail our analysis of the anti-ballistic missile defense issue. I described the three major purposes for which we might want to deploy an ABM system, the kinds of radars and missiles which would be involved, the technical uncertainties which still remained to be resolved, and the costs and benefits of some of the alternative deployments. With regard to the three purposes, I concluded that:

- The deployment of an ABM defense for Minuteman might offer a partial substitute for the further expansion of our offensive forces in the event the Greater-Than-Expected Soviet threat began to emerge.

- The deployment of an austere ABM defense against a Red Chinese ICBM threat might offer a high degree of protection to the entire nation, at least through the 1970s.
- The deployment of an ABM defense for the protection of our cities against the kind of heavy, sophisticated missile attack the Soviets could launch in the 1970s would almost surely cause them to react by increasing the capabilities of their offensive forces, thus leaving us in essentially the same position we were before.

Further study of this issue during the last year has served to confirm these conclusions. Since I have already touched on the first purpose in connection with the analysis of our Assured Destruction capabilities against the Greater-Than-Expected Soviet threat, I will limit my discussion at this point to the other two purposes.

Defense Against the Red Chinese Nuclear Threat. As I noted earlier, there is mounting evidence that the Red Chinese are devoting very substantial resources to the development of both nuclear warheads and missile delivery systems. Within a period of 39 months, they detonated seven nuclear devices. . . .

These seven nuclear tests, taken together with their continuing work on surface-to-surface missiles, lead us to believe that they are moving ahead with the development of an ICBM. Indeed, if their programs proceed at the present pace, they could have a modest force of ICBMs by the mid-1970s.

In the light of this progress in nuclear weapons and missile delivery systems, it seemed both prudent and feasible to us last September to initiate the deployment of an austere Chinese-oriented ABM defense. We knew from our continuing study of this system that it could be deployed at an investment cost of about $5 billion, and could be highly effective against the kind of threat a Chinese force might pose in the 1970s.

As presently defined, the Sentinel ABM system (i.e., the system specifically designed against the Chinese threat) would consist of Perimeter Acquisition Radars (PARs), Missile Site Radars (MSRs), long range Spartan area defense missiles and, later, some Sprint local defense missiles for certain special purposes. The effectiveness of this deployment in reducing U.S. fatalities from a Red Chinese attack in the 1970s is shown in Figure 3.

It is apparent from this table that the Sentinel system, facing a relatively "primitive" attack, could probably hold U.S. fatalities below one million. Obviously, if and when the Chinese ICBM force grows quantitatively and qualitatively beyond the levels shown in Figure 3, additions and improvements would probably have to be made in the Sentinel system. We believe, however, that for relatively modest additional outlays the system could be improved so as to limit the Chinese damage potential to low levels into the mid-1980s. The Sentinel system would also have a number of other advantages. It would provide an additional indication to the people of Asia that we intend to support them against nuclear blackmail from China, and thus help to convince the non-nuclear countries that acquisition of their own nuclear weapons is not required for their security. Furthermore, this initial deployment would serve as a foundation to which we could add a defense for our Minuteman force if that later becomes desirable. Finally, it could protect our population against the improbable, but possible accidental launch of a few ICBMs by any one of the nuclear powers.

Deployment of Nike-X for Defense of Our Cities Against Soviet Attack. Nothing has occurred during the last year to change my conviction that the deployment of the Nike-X system for the defense of our cities against a Soviet attack would, under present circumstances, be a futile waste of our resources. I believe it is clear from my earlier discussion of the trends in the nature of the threat, as evaluated by our intelligence community, that the Soviets are determined to maintain a nuclear deterrent against the United States. If this is true, as I believe it is, any attempt on our part to reduce their Assured Destruction capability below what they might consider necessary to deter us would simply cause them to respond with an offsetting increase in their offensive forces. It is precisely this process of action and reaction upon which the arms race feeds, at great cost to both sides and benefit to neither. This point is illustrated in Figure 4 which is based on nuclear strike capabilities as they might be viewed by the potential adversaries.

Posture A is a light defense against a Soviet missile attack on our cities. It consists of an area defense of the entire continental United States, providing redundant (overlapping) coverage of key target cities to provide some protection against those warheads which get through the area defense. Posture B is a heavier defense with the same area coverage, but with much greater sophistication in its electronics and a higher-density Sprint defense for 52 cities.

Postures A and B would also require some improvement in our defense against manned bomber attack in order to preclude the Soviets from undercutting the ABM defense; we would also want to expand and improve our antisubmarine warfare forces to help defend against Soviet missile-launching submarines. The "current" estimates of the investment cost of the total Damage Limiting package are at least $13 billion for Posture A and at least $22 billion for Posture B. On the basis of past experience, however, actual costs would more likely be $40 billion by the time the system had been completed.

Cost, however, is not the problem. If we could actually build and deploy a genuinely impenetrable shield over the United States, we would be willing to spend $40 billion. But, if after spending these tens of billions of dollars, we could still expect to find ourselves in a position where a Soviet attack could inflict unacceptable damange on our population because of their response to our defensive efforts, I do not see how we would have really improved our security or freedom of action. And neither can I see how the Soviets will have improved their security and freedom of action, if, after all their additional expenditures for offensive and defensive systems, we can still inflict unacceptable damage on them, even after absorbing their first strike. For this reason we have come to the conclusion that both sides would be far better off if we can reach an agreement on the limitation of all strategic nuclear forces, including ABMs.

In any event, there is no point whatever in our responding to a massive ABM deployment on their part with a massive ABM deployment of our own. Instead, we should act realistically and further strengthen our offensive forces, if and when necessary, to preserve our assured destruction capability.

Anti-Bomber Defense

Three years ago, when I appeared before this committee in support of the FY 1966 Defense Budget, I said:

> "One of the major issues we face in the Strategic Defensive Forces is to determine the proper overall level of the anti-bomber defense program. Our present system for defense against manned bomber attack was designed a decade ago when it was estimated that the Soviets would build a force capable of attacking the United States with many hundreds of long-range aircraft. This threat did not develop as estimated. Instead, the major threat confronting the United States consists of the Soviet ICBM and submarine launched ballistic missile forces. With no defense against the ICBM and only very limited defenses against the submarine launched ballistic missiles, our anti-bomber defenses could operate on only a small fraction of the Soviet offensive forces in a determined attack. Moreover, the anti-bomber defense system itself is vulnerable to missile attack. It is clear, therefore, as it has been for some years, that a balanced strategic defense posture requires a major reorientation of our efforts—both within anti-bomber defense and between anti-bomber and anti-missile defenses."

Now that the anti-ballistic missile defense issue has been resolved, we are in a position to move forward intelligently on the solution of the anti-bomber defense problem. As you know, we have had this matter under study for quite some time, and in all of the various alternative force structures examined we have found that the indispensable element is a new Airborne Warning and Control System (AWACS). The reasons AWACS is so important are: its ability to track aircraft at low altitudes; its ability to provide detection at great distances from the United States; and its low vulnerability to missile attack compared with the existing ground-based surveillance, warning and control network.

The feasibility of AWACS, however, depends upon the successful development of a "downward-looking" airborne radar which can provide detection coverage of aircraft over land at any altitude. Last year I told you that we had a test program under way to examine three proposed solutions to the problem of developing such a radar which would be able to overcome the problem of ground clutter, and that we hoped to have sufficient data available by the end of the year to demonstrate the feasibility of the concept. Only then, I pointed out, would we be in a position to decide on the future composition of the anti-bomber defense forces. This work has, in fact, been progressing very well, and we now believe the required technology is within our reach. In fact, at least two of the possible solutions I mentioned last year look extremely promising, and we will eventually have to choose between them. Accordingly, the time is ripe for a comprehensive examination of the entire air defense problem.

NUMBERS OF FATALITIES IN AN ALL-OUT STRATEGIC EXCHANGE, MID–1970s[a]
(In Millions)

		Soviets Strike First Against Military and City Targets, U.S. Retaliates Against Cities		U.S. Strikes First at Military Targets, Soviets Retaliate Against U.S. Cities, U.S. Reliates Against Soviet Cities	
U.S. Program	Soviet Response	U.S. Fat.	Sov. Fat.	U.S. Fat.	Sov. Fat.
No ABM	None	120	120	120	80
SENTINEL	None	100	120	90	80
	Pen-Aids	120	120	110	80
Posture A	None	40	120	10	80
	MIRV, Pen-Aids	110	120	60	80
	+100 Mobile ICBMs	110	120	90	80
Posture B	None	20	120	10	80
	MIRV, Pen-Aides	70	120	40	80
	+550 Mobile ICBMs	100	120	90	80

[a] At fatality levels approximating 100 million or more, differences of 10 to 20 million in the calculated results are less than the margin of error in the estimates.

Figure 4.

There are six possible purposes that our air defense system might serve in the 1970s:

- Peacetime identification to prohibit free access over North America from the air. This purpose requires only a thin area-type defense plus a high quality surveillance capability.
- Nth country defense to prevent damage from an attack by such countries as Cuba, Red China, etc. This purpose would require a relatively thin but leak-proof, area-type defense and a good surveillance capability.
- Discouraging the Soviet Union from developing and introducing new bomber threats which would be costly to neutralize. This purpose would require that we have the capability to deploy within a reasonable period of time an upgraded air defense capable of countering both quantitative and qualitative improvements in the Soviet strategic bomber force, and that the Soviets be aware of our capability. Thus, this purpose places requirements on our research and development program but does not, in itself, demand the actual deployment of modernized air defenses at the present time.
- Limiting damage to our urban/industrial complex from a Soviet manned bomber attack in the event deterrence fails. The contribution which air defense can make to

achieving this objective is highly dependent on the overall effectiveness of our ABM capability. Air defense can make a major contribution in saving lives only if the United States deploys a strong missile defense and the Soviets do not respond effectively.

- Precluding an attack on our withheld strategic missile forces. This purpose requires a capability to prevent bombers from making serial attacks on a large number of missile targets with multiple gravity bombs. The current air defense system has already forced the Soviets to change their aircraft payloads to the extent that their bomber threat to our Minuteman force has been reduced to minor proportions.

- Providing a complete mobile "air defense package" which would include a transportable control system and a refuelable or long-range interceptor, preferably one which is capable of close combat under visual identification rules.

The Soviet heavy bomber force is expected to decrease gradually as their ICBM force continues to grow. (Medium bombers are not expected to play an important part in any attack on the continental United States.) Moreover, as previously noted, we have no evidence that the Soviets are developing a new advanced intercontinental bomber. Nevertheless, as in the case of the missiles, we cannot preclude the possibility of greater Soviet manned bomber threats by the mid-1970s. And, no matter how unlikely, we must also guard against a fighter/bomber attack from Cuba and possibly other nations.

For purposes of analysis, we examined a number of alternative forces, three of which I would like to discuss with you now. These three pretty well cover the range of choices available to us. The first alternative would be to continue the current air defense forces at least through the mid-1970s. The second would be to modernize the forces with AWACS for warning and control and the F–12 for interception. The third alternative lies midway between the other two, and would provide for AWACS and the upgrading of the F–106 with an enhanced fire control system (including a "look-down" capability to engage low-altitude targets) and a new air-to-air missile. These forces and their costs are summarized in Figure 5.

Under Alternative 2 and 3 the entire SAGE/BUIC ground environment would be phased out, leaving only the radars operated by the Federal Aviation Agency for peacetime air surveillance. However, some Over the Horizon (OTH) "backscatter" radars would be added to provide an aircraft early warning capability.

We have tested the three alternative forces against both the expected Soviet bomber threat and a number of different Greater-Than-Expected-Threats which the Soviets could mount in the 1976 time period. The results fully corroborated the basic conclusion we have drawn from all our air defense studies conducted to date, namely, that AWACS is of the first order of importance, the fire control/missile system is second, and the interceptor aircraft's performance is third.

The F–12 would be superior in discouraging such future threats as very long range ASMs and supersonic bombers, whereas the F–106X would be superior in discouraging SRAMs, decoys and self-defense missiles. The F–106X would be best in the mobile air defense role. No air defense system can provide significant Damage Limiting capabilities against the U.S. S.R. unless accompanied by a strong, effective ABM, a capability which is presently unattainable. Our analysis also showed that Alternatives 2 and 3 provide a good capability against Nth countries. On balance, the AWACS/ F–106X force seems to be the proper choice at this time.

I would now like to turn to our specific proposals for the Strategic Forces in the FY 1969–73 period.

Strategic Offensive Forces

The force structure proposed for the FY 1969–73 period is shown on a classified table provided to the Committee.

Missile Forces

In overall terms the missile forces we are proposing for the FY 1969-73 period are essentially the same as those I discussed last year—1,000 Minuteman, 496 Poseidon and 160 Polaris, plus 54 Titan II. Within these overall numbers, however, we are proposing some changes in mix and payload.

Minuteman. Last year I told you that in order to increase the capability of our offensive forces against a possible strong Soviet ABM defense, we proposed to increase the number of Minuteman IIIs in the force. I also pointed out that by FY 1973–74 it would probably become necessary to replace the earliest Minuteman II missiles, and that we could then add more Minuteman IIIs if that should appear desirable.

Although the Soviet ABM deployment is not moving forward as fast as anticipated last year, we now believe it would be desirable to increase the number of Minuteman IIIs. And, as I indicated earlier, we have included funds in the FY 1969 Budget for the development of dual-purpose super-hard silos for the Minuteman or a new land-based ICBM. . . .

Titan II. Although the Titan II will decline in importance as the Minuteman III and the Poseidon are deployed, it may be advisable to retain the present force of 54 missiles on launchers. . . . With the procurement of a small number of missiles in FY 1969-70, we can maintain the present

Alternative Area Air Defense Forces, 1976

	Alternative 1	Alternative 2	Alternative 3
Interceptors	F–101,2,4,6	F–12 [a]	F–106X
Airborne Cmd & Cntrl	EC–121	AWACS	AWACS
Ground-based C&C	SAGE/BUIC	FAA Radars	FAA Radars
10 year Prog. Costs [b]	$11.70 bil.	$13.70 bil.	$12.30 bil.
Anual Level-off Cost	$ 1.12 bil.	$ 0.75 bil.	$ 0.69 bil.

[a] Plus some F–106s for training and peacetime identification.
[b] Total FY 68–77 costs, including elements of the current force until phased out.

Figure 5.

force of 54 Titan missiles on launchers throughout the program period, instead of allowing it to decline after FY 1970 as we planned last year.

Polaris-Poseidon. The Polaris-Poseidon program is essentially the same as the one I presented here last year. . . . The proposed FY 1969 shipbuilding and conversion program includes funds for six Poseidon conversions and advance procurement for nine more.

New Strategic Missile Systems. Last year I told you that we are making a comprehensive study of new strategic missile systems. This study was completed last summer, and on the basis of its findings we have include $56 million in the FY 1969 Budget for advanced ICBM technology.

Strategic Bomber Forces. The manned bomber forces which we propose to maintain through FY 1973 are the same as those I presented here last year for the FY 1968/72 period.[c] The B-52C/Fs and the B-58s will be phased out as planned, leaving an authorized active inventory of 281 B-52G/Hs and 253 FB-111s. (The comparable unit equipment figures are 225 and 210, respectively.) The phase-in of FB-111s will slip slightly, so the phase-down of B-52s will be slowed to keep the same total force as previously planned.

. . . Since the new FB-111s will be entering the bomber force during FY 1969-72, and the B-52G/Hs can be maintained in a suitable operational condition well into the 1970s, there is no urgency for a decision on the production and deployment of a new bomber. Much more important at this time is the development of the new subsystems which old or new aircraft may require to penetrate the Soviet Air defenses in the 1970s, and we have included funds in the FY 1969 Budget for this purpose.

First, we plan to modify a number of B-52s so that they, as well as the FB-111s, can carry the SRAM missile. Second, we will continue work on a wide range of electromagnetic warfare devices, drawing on our most recent experience in Southeast Asia. Third, we will continue advanced development work on the engine and avionics systems integration for possible Advanced Manned Strategic Aircraft (AMSA) application. Last, we will continue studies of more advanced bomber penetration aids.

These subsystems will be designed so that they could be used both on our existing heavy bombers (B-52s) or on a new AMSA-type bomber, as well as on the FB-111 where feasible.

U. S. Air Force B-52G.

Strategic Defensive Forces

The strategic defensive forces proposed for the FY 1969-73 period are shown in a classified table provided to the Committee. . . .

Bomber Defense

The principal elements of the proposed anti-bomber defense program for the 1970s were discussed earlier. The precise phasing and details of the force levels beyond FY 1969 are still subject to change.

Surveillance, Warning and Control. As I noted earlier in my analysis of the anti-bomber defense problem in the 1970s, much of the existing U.S. surveillance, warning and control network can be phased out when the new AWACS and Over-the-Horizon radar become available. At that time, I believe we could phase out all but one of the SAGE Combat Centers, all the SAGE Direction Centers, about half of the search radars, all of the Gap Filler and DEW line radars, and all of the AEW/ALRI aircraft, while retaining the NORAD Combat Operations Center, the manually operated Combat Center in Alaska, 10 BUIC III Control Centers, some of the search radars and the SAM Fire Coordination Centers required for the Nike-Hercules batteries. The elements eliminated from the program would be replaced by AWACS aircraft and new Over-the-Horizon (back-scatter) radars. (We have consulted with the Canadian Government, which has already indicated that it intends to continue its cooperation in the air defense of the continent.)

Manned Interceptors. The ultimate U.S. manned interceptor force will consist of modified F-106X (supported by C-130s which would be used to move ground crews and equipment to the dispersal recycle bases), plus an Air National Guard F-102 squadron in Hawaii. This squadron, together with the search radars, will continue to provide a local air defense capability for that remote state. We plan to start the phase-down of the interceptor forces in FY 1969.

Surface-to-Air Missiles. On the basis of our present plans, all of the Bomarc force would be phased out when the full F-106X force becomes operational. Most of the Hercules and all of the Hawks, however, will be retained.

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[c] *Aircraft inventory data used in this statement reflect the Authorized Active Inventory (AAI), i.e., unit equipment (UE), pipeline, training and other support aircraft but not advance attrition aircraft.*

Missile and Space Defense

The decision to deploy a Chinese-oriented ABM defense system will undoubtedly have an important impact on other strategic defense programs. For example, we already know that the Perimeter Acquisition Radar (PAR) planned for the Sentinel system could also be made to handle some of the long-range acquisition and tracking functions presently performed by the three BMEWS sites. Conversely, the Over-the-Horizon (back-scatter) radars planned for the anti-bomber defense could also be used to provide limited detection and tracking of ballistic missiles launched from submarines. Moreover, in order to provide a backup for BMEWS, we have already deployed several Over-the-Horizon (forward-scatter) radar transmitters and receivers, and we have had under active development for a number of years a satellite-borne missile warning system which now appears to be capable of providing earlier warning than BMEWS. (The forward-scatter OTH and the satellite-borne missile warning system are two of the measures I alluded to in my earlier discussion of the Soviet FOBS.) Clearly, the time has come when we must systematically examine all of these warning systems in relation to one another, with a view to eliminating unnecessary redundancy and ensuring that the remaining systems are truly integrated into a workable whole. Accordingly, I have recently asked the Joint Chiefs of Staff to establish a Joint Continental Defense System Integration Planning Staff to study this entire problem in depth, including the functioning of all defensive systems in a wartime environment.

Missile Warning. Pending the completion of the aforementioned study, we are not proposing any changes in the BMEWS program. However, we are making certain changes in the siting of the Over-the-Horizon (forward-scatter) radar program. . . .

As I indicated earlier, we are developing a back-scatter OTH radar for use in the anti-bomber defense. . . We presently plan to begin installing the first back-scatter OTH radar in the near future. While the chief function of this radar will be research and development, we hope that it will also provide some useful operational data. It will also give us an opportunity to test the back-scatter system in the ICBM warning role.

Anti-Ballistic Missile Defense (Sentinel). As previously mentioned, the Sentinel system will consist of PAR and MSR radars and Spartan and Sprint missiles.

The PAR is a low frequency phased-array radar used for long-range surveillance, acquisition and tracking. The presently planned characteristics of this radar place its design well within the state of the art, and for this reason the first PAR can be installed directly at its tactical site rather than at a field test site. . . .

The MSR is a phased-array radar used to control the Sprint and Spartan interceptors. It can perform much the same functions as the larger MAR, which is not required in a limited deployment, but on a smaller scale. . . . The MAR, which is the most sophisticated component of the Nike-X system, will remain in an research and development status. A TACMAR (a smaller version of the MAR) will be installed at Kwajalein for final design and testing.

The Spartan missile, as presently designed, will have three stages and utilize an advanced warhead, and should be able to intercept objects at ranges in excess of several hundred miles and at exoatmospheric altitudes. However, we now plan to make some further improvements in the Spartan to enhance its capability against a FOBS. The Spartan will also be included in the full systems tests planned at Kwajalein.

The Sprint missile is designed to attack incoming warheads after the atmosphere has helped to separate out the accompanying decoys, chaff, etc. . . . Initial flight tests are currently being conducted at the White Sands Missile Range, and beginning in early 1969 the missile will be tested at Kwajalein, where the overall systems tests against actual ICBMs fired from Vandenberg Air Force Base will be conducted.

Although, as stated earlier, ABM systems to protect population centers against large sophisticated attacks do not appear practical, we will continue to explore new technical approaches to this objective. The Nike-X development program will be used for this purpose. In addition, we will continue to support a number of other ABM related programs, particularly ARPA's Project Defender.

In total, the FY 1969 Budget request includes about $1,232 million for ABM defense: $651 million for the deployment of Sentinel (in addition to $229 million in FY 1968); $313 million for Sentinel development; $165 million for ABM advanced development (Nike-X); and $103 million for Defender. In addition, the Atomic Energy Commission's FY 1969 budget includes funds for ABM warhead development and production.

Anti-Satellite Defense. As described in previous years, we have a capability to intercept and destroy hostile satellites within certain ranges. This capability will be maintained throughout the program period.

SPASUR and SPACETRACK are our satellite tracking and identification systems in the NORAD SPADAT system. . . .

One of the projects that the Joint Continental Defense Systems Integration Planning Staff will undertake is the development of a master plan for the evolution of these two systems. The ever-growing population of space objects and "junk" that must be identified and tracked means that we will have to make major improvements in these systems in the near future. In the case of the Spacetrack system, we have included funds in the FY 1969 Budget for the modification of the data processing and communications equipment at existing sites and for some new construction at these sites. Any further improvements or expansion will be delayed pending a full study of the requirements for electro-optical sites in addition to the camera and radar sites, the links with the Sentinel system, the need for a separate data processing center, etc.

Civil Defense

The Civil Defense program proposed for FY 1969 contemplates no important change in basic objectives from those which I discussed last year. However, we have held the FY 1969 program to the lowest possible sustaining rate, pending the end of the Vietnam conflict. . . .

. . . $77.3 million is request for FY 1969.

General Purpose Forces

The General Purpose Forces include most of the Army's combat and combat support units, virtually all Navy units (except the Ballistic Missile Submarine Force), all Marine Corps units and the tactical units of the Air Force. These are the forces on which we rely for all military actions short of general nuclear war, i.e., limited war and counterinsurgency operations. . . .

Requirements for General Purpose Forces

I need hardly remind you that the overall requirement for General Purpose Forces is related not so much to the defense of our own territory as it is to the support of our commitments to other nations. As I pointed out last year, the fact that each of these commitments gives rise to contingencies for which we must plan does not mean that we will ever be confronted by "40-odd South Vietnams simultaneously." These commitments do not require us to execute automatically any specific contingency plan in response to a given situation, without regard to the circumstances existing at the time. And, while we cannot expect to meet all of the contingencies simultaneously, neither can our opponents.

What we have done over the years is to study a wide variety of possible contingencies involving the potential need for U.S. forces. . . . We have examined in considerable detail our land and tactical air force requirements for some 16 different contingencies.

. . . We do not plan to meet all theoretically possible emergencies simultaneously, since the risk of this is very low and the cost very high. Rather, our policy now is to set the size of the General Purpose Forces so that we can simultaneously meet the more probable contingencies.

The largest contingency outside NATO, in terms of potential U.S. force requirements, is a Red Chinese attack on Southeast Asia. Therefore, we must provide, in addition to our NATO requirements, the forces required to meet such an attack in Asia as well as our commitments in the Western Hemisphere. Because of the basic uncertainty inherent in estimates of such requirements, we add to these forces a Strategic Reserve.

I should emphasize that, although we determine the size of our forces in this manner, we have considerable flexibility in meeting other possible contingencies which require smaller forces, or those not requiring as rapid a buildup of forces. For example, in the case of the Vietnam conflict, we used the forces earmarked for a major Asian contingency to meet the immediate needs in the summer of 1965 and then activated temporary forces to meet the longer range needs.

I would now like to review with you each of these major contingencies and the forces required to meet them.

Selected Characteristics of Air Forces—All Regions

Primary Mission Capability	NATO (Percent)	Warsaw Pact (Percent)
Interceptors (high speed/low payload)	9	34
Multipurpose (high speed/high payload)	31	8
Attack (low speed/high payload)	24	20
Reconnaissance	7	2
Low Performance (low speed/low payload)	29	36
TOTAL	100	100
Payload Index	100	35
Index of Typical Loiter Time	100	20–40
Index of Crew Training	100	55

Figure 1.

NATO

As I mentioned last year, we have set three major objectives for our NATO non-nuclear forces:

- To deal successfully with a conflict arising through miscalculation.
- To show determination by reinforcing in time of crisis in parallel with a Warsaw Pact mobilization.
- To help deter a deliberate non-nuclear attack by denying the Soviets any confidence of success unless they use a very large force that would clearly threaten NATO's most vital interests, thereby running the attendant risks of rapid escalation to nuclear war.

In all regions except Norway, the NATO-Pact forces are about equal in manpower. NATO has about 900,000 troops deployed in all regions of Continental Europe, compared to 960,000 troops for the Warsaw Pact. While manpower comparisons, alone, are not conclusive measures of military strength, I believe they are reasonable first approximations of relative ground force capabilities.

In the case of air forces, our relative capability is far greater than a simple comparison of numbers would indicate. By almost every measure—range, payload, ordnance effectiveness, loiter time, crew training—NATO (especially U.S.) air forces are better than the Pact's for non-nuclear war, as shown in Figure 1.

As a result of these advantages, which continue to move in our favor every day, we estimate that the NATO M-Day air forces deployed in Central Europe would have significantly more offensive capability than the Pact forces.

If either side chose, the ready land forces could be greatly reinforced before any fighting began (as in the 1961 Berlin Crisis). Assuming a simultaneous mobilization, within 30 days the Pact could probably gain a manpower advantage on the Central Front and a somewhat greater advantage in overall ground combat capability. This gap would then begin to narrow with the arrival of more U.S. forces.

NATO tactical aircraft reinforcements would about equal the Pact's in the early stages of mobilization, after which we could add considerably more aircraft than the Pact. Our main advantage in this area, however, stems from the great superiority of our aircraft, pilots and weapons just discussed above.

In my judgment, the forces planned are adequate to meet our objectives.

The most likely kind of conflict in NATO Europe is one arising from miscalculation during a period of tension, rather than a deliberately pre-planned Soviet attack. In this kind of crisis, the Soviets would not necessarily have the initiative in mobilizing and deploying troops. Even though the Pact forces could mobilize somewhat faster than NATO, they would not achieve a decisive advantage. Furthermore, NATO has an air advantage. It would thus appear that the balance of forces would, over time, be sufficient to cope with the situation and hopefully lead to a de-escalation of the crisis. Nevertheless, we are urging our allies to improve their reserves and, thus, our confidence of being able to match a Pact buildup.

We cannot entirely discount a deliberate Soviet attack. If the Soviets were to attack following a successful concealed mobilization they could have, temporarily, a substantial advantage in land forces. Our own forces are large enough, however, to require the Soviets to build up and attack with a huge force. Such a buildup would be, at best, difficult to hide. In any event, the Soviet Union, and especially her East European Allies, would have to assume that the West might react against such attack with nuclear weapons. Considering destructive potential of both our theater and strategic nuclear forces and the fact that such a deliberate attack would constitute a clear threat to our vital interests, the Soviets should be strongly deterred from attempting this strategy.

A surprise Soviet attack in the Central Region without a prior buildup might achieve some initial territorial gains, but it would sacrifice the potential advantage of a faster initial mobilization capability and the simultaneous use of East European forces. And, unless reinforced with troops from the Soviet Union or with East European forces, the Soviet forces alone would be inadequate to sustain this kind of attack.

Asia

While China would probably prefer to expand her influence through insurgencies, she might turn to a direct attack on Korea, Taiwan, India, or Southeast Asia if an insurgency were failing and she was willing to risk overt aggression.

At first glance the size of the Asian communist forces—3 million men—suggests that it would be nearly impossible to stop such an invasion (Figure 2).

In fact, however, the Red Chinese have only a limited ability to attack beyond their borders. First, there are great barriers between China and her neighbors: the Himalayas, the jungles of Southeast Asia, and the Formosa Straits. Second, because the Chinese soldier is not nearly as well-equipped and supplied as his American counterpart, he is far less effective in conventional combat. Some indices of the relative firepower and mobility support of Chinese and U.S. soldiers are shown in Figure 3. The average U.S. soldier has three times the firepower, five times the motor transport, and twenty times the equipment of a Chinese soldier.

Finally, the Asian Communists have limited offensive air ability. The MIG-15s, 17s and 19s, comprising 85 percent of the Chinese Air Force, cannot attack targets much beyond the borders of China because of their limited range and the location of Chinese airfields.

When one examines the invasion threat on a theater-by-theater basis, it is clear that, despite the huge Chinese Army, existing U.S. and local forces provide both a strong deterrent and the ability to defend important areas.

India. Indian forces of 1.1 million men should be able to defend their country against Chinese aggression. The Indian forces have more firepower per man than the Chinese and, with vastly improved communications and transportation, can move quickly to reinforce critical areas. The Indian forces deployed forward are now much larger than they were in 1962 when the Chinese attacked.

Asian Communist Forces

	China	North Vietnam	North Korea	Total
Active Land Forces	2,351,000	442,000	345,000	3,138,000

Figure 2.

Indices of Relative U.S./Chinese Firepower and Mobility Support Per Man

(U.S. = 100)

		Chinese	
	U.S.	Southeast Asia 'Task Force	Korean Task Force
Major Direct Fire Weapons	100	28	40
Area Fire Weapons	100	36	43
Motor Vehicles	100	19	26
Helicopters	100	0	0
	(Quantities of Major Equipment Per Man in Theater Measured in U.S. Dollars)		
	100	5	10

Figure 3.

Taiwan. Nationalist Chinese land forces (372,000) are fully adequate to defeat a Chinese amphibious assault, even if the Red Chinese used their entire amphibious assault force and a sizable portion of their air and naval forces.

Korea. Republic of Korea (ROK) land forces provide a strong deterrent against even a maximum Chinese/North Korean attack.

The Chinese/North Koreans would have a manpower advantage during the early stages of a mobilization. This advantage is offset, however, by the ROK's firepower (15 percent more per man), large U.S. air and naval support, the advantages of a prepared defense and large scale fortifications.

Analysis of the Korean War throws light on the defensive forces required. In 1951, the last major Chinese offensive (825,000 men) was stopped by a force of some 535,000. The ROK alone would have more men today than the total UN force in 1951, and the differences in effectiveness that were present then between ROK and U.S./UN troops are now mostly gone.

Southeast Asia. Three main tasks determine the need for U.S. and allied forces to meet the Chinese invasion threat to Southeast Asia. First, we would need defensive forces to stop the attack. Second, we would need forces for rear area security. Third, we would need forces to launch a counterattack if that course is indicated.

The United States and its allies would have an overwhelming tactical air advantage in any Asian war. Although the Asian Communists have a large number of aircraft, 85 percent of them are short range interceptors with limited payload/range capability. The more than 1,000 fighter-attack aircraft now in Southeast Asia are capable of delivering 5-10 times as much payload as the entire Communist force, even with very conservative assumptions regarding the Communist deployment capability.

I will discuss our current Southeast Asia operations and future force requirements for these operations later in this section of the statement.

Control of the Seas

The regional contingencies discussed above require substantial numbers of ships, ranging from attack carriers and amphibious assault ships to oilers and cargo ships for resupply. All these must be protected against enemy attack by air and submarine.

For this purpose our escort ship requirements total 231 including about a 16 percent overhaul allowance. (I will discuss this program in detail in connection with Navy General Purpose Forces.) Analysis of our escort ship forces shows that anything in excess of some 230 escorts would be over-defending the forces for which they are required. If we needed more overall capability, we would be better off putting our resources into additional carriers, amphibious ships, etc., rather than the escorts.

In addition to providing naval support for the regional contingencies, we also want to have a capability for successfully concluding a war at sea.

Soviet (and to a lesser degree, Red Chinese) attack and cruise missile submarine forces are the main threat to our ability to win a war at sea. As I have stated in past years, our war at sea strategy is based essentially upon the rapid emplacement of ASW forces, comprised of submarines and land- and sea-based ASW aircraft, between the enemy submarines and their potential targets. Recent studies have reaffirmed the potential effectiveness of this concept and the probability that in an all-out war at sea we would be able to destroy a very large proportion of the Soviet submarine force in a matter of a few months, while losing only a relatively small part of the Free World merchant fleet. (We would, of course, lose some of our naval vessels as well during the same period.)

Logistics Requirements

. . . The General Purpose Forces are now divided into four categories, each with logistics objectives tailored to its particular mission.

The NATO category covers those items which we buy mainly for the defense of NATO

Forces in the Indefinite Combat category are maintained for use where we cannot predict the place of combat.

Forces in combat in Southeast Asia, the third category, are provided with sufficient materiel to replace whatever they consume. This materiel is provided from an active production base.

Forces in the remaining category are those which for various reasons do not fit into any of the above categories for purposes of logistics guidance. These forces provide the training, rotation, attrition reserves, and overhaul base for forces deployed in Southeast Asia or are maintained in anticipation of such a need.

Capabilities of the General Purpose Forces

In the years since 1961, our non-nuclear war capabilities have been greatly increased and made more flexible. Indeed, by the time the decision to come to the assistance of South Vietnam with our own combat units was forced upon us in the summer of 1965, the General Purpose Forces had been brought to an unparallelled level of peacetime readiness. This fact was clearly reflected in the relative speed and effectiveness with which the initial deployment was carried out. Moreover, in most cases we plan further increases in capability by the early 1970s.

In the following pages, I will be discussing at times the capabilities of our forces in terms of quantitative indices of effectiveness. These indices are still quite primitive, and they do not in all cases measure our capabilities in relation to those of possible enemies. The needed improvements in the indices have yet to be made, but even in their present state they provide useful indications of the changes in the combat power of our forces over the years.

Land Forces

In 1961 it was clear that our active and reserve land forces would have to be significantly improved if they were to meet our revised strategic objectives. More specifically, we needed to: add force structure in the form of new divisions and support units; increase the readiness of existing forces through increased manpower and procurement; reorganize and augment the active and reserve divisions to increase their non-nuclear capability for maneuver and firepower; and reorganize the Army and Marine Corps reserve forces to get the right balance between combat and support forces and to ensure that the reserve forces "fit" properly with the active forces.

We increased the number of active

combat assigned Army divisions from 11 to 16, added enough men to man them, and expanded the training base to sustain the force. Total combat assigned divisions (Army and Marine, active and reserve) in the permanent force were increased by 66 percent.

The procurement of conventional weapon and support systems was greatly expanded. For example, during FY 1962–65 direct obligations for Army procurement were about 60 percent greater than during the previous four years. In addition, the Army reorganized its divisions, dropping the nuclear-oriented Pentomic configuration and introducing the ROAD concept. This increased the Army's ability to tailor its forces quickly to meet a variety of combat situations, and also laid the organizational groundwork for the needed increases in firepower and mobility.

The Army's field artillery structure was revised and self-propelled artillery pieces with larger calibers and greater range were introduced. In fact, the total number of artillery pieces authorized in the permanent Army forces increased by 79 percent, and the sustained fire capability by 85 percent. . . .

The number of Army active and reserve mechanized infantry and tank units was increased by 110 percent, and their tanks and tactical vehicles were modernized. . . . By end FY 1968, we will have several thousand M–60s equipped with a 105mm gun, a modern fire-control system, and a diesel engine that gives it greatly increased range over the M–48. In addition, we will have a large number of M–60s and Sheridan light tanks equipped with the new 15mm Shillelagh missile system, which gives us for the first time a long-range fire capability with a high first-shot kill probability. . . .

Much improved mobility, especially for our forces oriented toward underdeveloped areas, was obtained through greater emphasis on helicopters. . . . By the end of FY 1970 (when FY 1968 orders are delivered), we will have about 7,500 modern turbine helicopters with much greater capacity and speed, and higher possible utilization rates than the ones they replaced. . . .

New air mobility concepts were introduced into land force operations. The creation of a provisional air assault division permitted us to test airmobility concepts in 1964–65, and allowed us to form the first airmobile division in time to deploy it to Southeast Asia in the summer of 1965.

The division force concept was developed to assure that all of the combat and other support units needed to support an engaged division in a distant theater were fully recognized in determing force structure, manpower, and procurement requirements as well as in establishing airlift/sealift requirements. For example, each Army division of about 16,000 men needs twice that number in nondivisional support units in a properly balanced force structure. (This was a principal reason why it was so important to redistribute the reserve force structure, creating the right kind and proper number of support units while reducing the number of divisions.)

We found that support forces had to be increased substantially. By end FY 1968, for example, the Army will have 1.6 times the number of tactical cargo trucks, trailers, and semitrailers it had in 1961, increasing its capability to carry dry cargo by 82 percent and liquid cargo by 125 percent. . . .

We took a number of actions to improve the readiness of reserve forces and, as previously mentioned, their "fit" with the active forces.

. . . We have now established a balanced reserve force for the Army comprising eight complete division forces plus the division force units needed to round out the Active Army. The new plan calls for 192 hours of training annually for each reservist (plus additional training time for selected personnel) twice that required in 1961. At least half of the 192 hours will be spent in realistic weekend drills and the remainder in drills lasting at least four hours.

We have now formed a complete division force which upon mobilization would have the same capability as an active division force, except for helicopter lift, which would be less than that of an active division force.

Tactical Air Forces

The United States has about 7,000 tactical aircraft and its allies have another 6,000—a total of 13,000. This is. . .about the same as the current world-wide Communist total.

. . . Our tactical air capability has increased dramatically, relative both to 1961 and to the threat. Under our presently planned program this trend will continue through the early 1970s. This increase in overall capability results from the modernization of the forces together with major improvements in conventional ordnance. For instance, we have doubled the payload capability of our tactical aircraft

U. S. Army M551 Sheridan weapon system.

since 1961, and we will double it again by 1972. In 1961, only 15 percent of our fighters had all-weather air-to-air capability, today about 50 percent do, and by 1972 80 percent of them will. With respect to conventional munitions, modern air-delivered, anti-tank weapons reduce substantially the number of sorties required to destroy a given number of enemy tanks compared with the general purpose bombs used in 1961. Similarly, we have developed guided air-to-surface weapons, such as Walleye, which reduce the number of sorties required to destroy a target such as a bridge.

In contrast, the present Communist tactical air forces are designed primarily for defense over home territory. Although their aircraft are well suited to the short range interceptor role, they have low payload when used offensively and limited loiter time when used defensively. Today, only about 25 percent of the Communist force, as opposed to 53 percent of the Free World force, are modern aircraft with a significant attack capability. By 1972, more than 75 percent of the Free World inventory will be modern attack aircraft, while the Communists will still have only 25 percent in this category. As a result, the Free World aircraft can carry, on the average, 1.8 times as much payload as the Communist aircraft today and this will increase to 3.7 times as much by 1972. . . .

Indeed, our relative advantage is substantially greater than the foregoing payload comparison indicates, since we also have better munitions and pilots. The result is that in any major contingency there is little doubt that we and our allies could provide more offensive airpower than the opposing forces. Perhaps the greatest uncertainty in the tactical air force posture is our own vulnerability to attack while our aircraft is on the ground. We need shelters and other defensive measures to protect against such attacks. I shall return to this point later.

Anti-Submarine Warfare Forces

Since 1961, we have substantially increased our ability to detect and destroy enemy submarines and to protect our forces and shipping from them. Under our presently planned program, the increase between now and the early 1970s will be even bigger.

Submarines. Since 1961 we have increased the number of nuclear-powered attack submarines (SSNs) in our fleet from 13 to 33, and the number of "first class" SSNs of Skipjack and later classes from 4 to 24. We expect to increase the force to a total of 60 "first class" SSNs.

Guided missile frigate USS Dahlgren (DLG-12).

Air Anti-Submarine Warfare (ASW) Forces. In 1961 our ASW aircraft were P–5 seaplanes, P–2 land-based patrol aircraft and S-2 carrier-based aircraft. We have been replacing the P-2 and P-5 with the P-3, the last having far greater range and endurance as well as room for our new electronic devices, and more torpedoes, sonobuoys, and crew space. The VSX, whose development was approved this year, will replace the S-2 and improve our sea-based air ASW capability in the same way.

In 1961, we were installing a new system to be used by ASW aircraft, consisting of LOFAR sonobuoys and processors for detecting enemy submarines and CODAR for localizing contacts to permit weapon drop. We have developed a new sonobuoy called DIFAR which promises to improve further our kill capability.

The overall trend in air ASW search capability is shown in the following table:

	End Fiscal Year	
	1961	1968
Airborne ASW (1961 = 100)	100	231

ASW Escort. Since 1961 we have increased the number of our ASW escorts by 14 percent, and their screening capability by 100 percent. The main reason for the larger than proportionate increase in capability is the introduction of the powerful long range SQS–26 sonar, and continuing improvement of present sonars like the medium range SQS–23. The overall increase in escort screening is as follows:

	End Fiscal Year	
	1961	1968
Escort Screens (1961 = 100)	100	163

We have also improved the ability of our escort forces to convert detections to kills. Many of our ASW escort ships now have ASROC (a torpedo delivery rocket). All our escort ships are now equipped with the modern MK–44 torpedo. A still newer weapon, the MK–46 torpedo, is now being introduced and will replace the MK–44.

Fleet Anti-Air Warfare

The air threat to the fleet, in recent years, has come to include anti-ship homing missiles launched from aircraft, submarines, surface ships, and coastal sites. Thus our fleet air defense systems must now be able to handle smaller, faster targets that appear with little warning and may be accompanied by electronic jamming.

To keep pace with the threat, we have considerably improved and expanded our fleet anti-air warfare forces. Twenty of our 30 fighter squadrons have been converted to F-4s since 1961. Similarly, we have been replacing older E-1 warning and control aircraft with more capable E-2s; these latter provide an instantaneous control link with other anti-air warfare forces through the Naval Tactical Data System.

The number of surface-to-air missile ships has increased threefold since 1961 and their overall capability has increased even more, since today's missile systems are many times more effective. Over the next few years we plan to spend about $700 million to modernize additional missile ships, giving them several times their present capability, and also to build new high performance missile ships (DXGN/DXG).

The following table shows the improvement achieved in our missile ship forces:

	End Fiscal Year	
	1961	1968
Total Missile Ships	23	75
Missile Ships with Naval Tactical Data System	2	15

Amphibious Assault

Another major Navy and Marine Corps mission that has received greatly increased emphasis in recent years is amphibious assault. Our strategic analysis shows:

- That we should have enough assault ships to lift and land the assault echelons of one Marine Expeditionary Force (division/wing team) in the Atlantic and one in the Pacific.
- That the speed of these ships is quite important for Pacific forces and less so for the Atlantic.

The following table shows the past and planned growth in assault lift:

	End Fiscal Year	
	1961	1968
Total, Assault Ships	104	142
Modern, Fast Assault Ships	13	31
Index of Total Lift (1961 = 100)	100	130
Index of Fast Lift (1961 = 100)	100	290

By the mid-1970s the entire Pacific amphibious assault force and one-half the Atlantic force will be made up of modern 20-knot ships. The introduction of the new-design amphibious assault ship, the LHA (now in contract definition), will provide wider assault flexibility—accomplishing in a single ship what it now takes several to do.

Theater Nuclear Forces

In addition to increasing our non-nuclear capabilities since 1961, we have also increased our theater nuclear capability. For example, we have almost doubled the deployment of nuclear weapons in Europe.

Even more important, we have improved the survivability of our tactical nuclear delivery systems by replacing the Mace missile with the mobile Pershing missile, and we are buying an improved Pershing to replace aircraft for nuclear alert, thus freeing more aircraft for the conventional role. Both the Mace missile and tactical aircraft are vulnerable to nuclear attack due to their fixed locations.

NATO's tactical nuclear capability has been substantially enhanced. In FY 1961 we provided virtually no nuclear support to our allies; in FY 1968 we support a wide mix of allied nuclear delivery systems, including: tactical aircraft, Pershing missiles, Sergeant missiles, Honest John missiles, eight-inch howitzers, Nike Hercules missiles.

Southeast Asia Operations

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U. S. Forces in Southeast Asia

Last year we budgeted for a total of about 470,000 men in South Vietnam by June 1968, but last summer General Westmoreland requested and the President agreed to provide additional forces. Thus, by Dec. 31, 1967, we had about 485,000 men there, and this number will grow to a total of 525,000. (Total allied forces in South Vietnam increased from 690,000 in June 1965 to 1,298,000 in December 1967 and are scheduled to grow to about 1,400,000 by June 1968.) The U.S. ground forces in December 1967 included 102 maneuver battalions (79 Army, 23 Marine Corps). The ground forces are now supported by about 3,100 helicopters, and this number will continue to grow.

In June 1965, before the major buildup of U.S. forces in Vietnam began, both the consumption and production of ground ammunition were running at relatively low levels, as is normal in peacetime. Since then, both consumption and production have increased manyfold. During the early months of the force buildup, when consumption outpaced production, ammunition requirements were met by drawing down war reserve stocks which, of course, is just what our planning envisioned. Actually, the amount drawn down was small in relation to our total stocks. (All ground ammunition figures relate to the 40 major items accounting for about 85 percent of the tonnage used in Vietnam.)

During the past year, ammunition production has nearly tripled—from 39,000 tons in December 1966 to 113,000 tons in December 1967—and since June, has equalled or exceeded consumption. Actual consumption of the 40 major items in 1967 was a little over one million tons (compared with last year's estimate of 900,000 tons). Production will continue to increase during the next few months and should level off at about 130,000 tons per month by December 1968, well above the projected consumption rate. The excess of production over consumption will be used to replace the reserve stocks drawn down earlier and will also serve as a safety factor in case consumption exceeds the planned levels. Our reserve production capacity, which will still be large, serves as a second safety factor to meet an even larger consumption requirement. The FY 1969 Budget includes about $2.8 billion for ground ammunition.

We now have a total of about 1,000 fighter/attack aircraft based in South Vietnam, Thailand and aboard carriers offshore. We are now flying a total of about 28,000 to 30,000 attack sorties per month. In addition, the B–52 force in 1967 flew a total of more than 800 sorties per month. Total air ordnance consumption was running about 83,000 tons per month in the last few months of 1967. (Air ordnance data refer to the 53 major items which account for about 95 percent of the tonnage used in Southeast Asia.) Production at the close of 1967 was running at about 100,000 tons per month.

As of that date, the world-wide inventory considerably exceeded the June 1965 figure. This is more than we believe is needed with a "hot" production base. Accordingly, we now plan to reduce these inventories somewhat, resuming the buildup to our "cold base" objective after hostilities are terminated. This will allow us to shut down the lines gradually, thereby avoiding unwanted surplus and cushioning the impact on the economy.

Large quantities of air-delivered munitions will continue to be needed, and a total of about $3.5 billion is included in our FY 1969 request for these items for all the Services.

No major change is planned in the "offshore" naval forces, except for the battleship New Jersey, which will deploy to the South China Sea. The river patrol force will be further increased from about 159 vessels in December 1967 to about 250 by December of this year.

During the past year, we have battle tested the first mobile "Riverine" force in the Mekong Delta. This force of three battalions has been stationed on two naval barracks ships (plus a barracks barge) and at a nearby land base (two battalions afloat and one ashore). We now plan to increase the size of this force.

Other additional deployments to Southeast Asia will require only a very small increase in the number of U.S. military personnel in Thailand, to a total of about 48,000. No significant increase will be needed at our bases in the Western Pacific (Ryukyus, the Philippines, Taiwan, Japan and Guam), where we have about 120,000 military personnel.

Our success in pushing the Communist main force units back into the highlands along the borders of South Vietnam has created new problems. Operating in such close proximity to the borders, our forces do not have much room for maneuver in attempting to cut off Communist units from their lines of communications. Consequently, we have had to develop new means for interdicting the flow of men and supplies to these units, e.g., the barrier system just south of the DMZ.

Army General Purpose Forces

Last year I described how the "division force" concept had helped us to achieve a better balance among all of the essential elements of our land forces, both active and reserve. Now we have reached the point where we can present these forces on a truly integrated basis.

Division/Brigade Forces

We have found it useful, in developing readiness requirements for specific units and in determining the peacetime distribution of units between the active and the reserve components, to divide the division force into three increments, each with about 16,000 men.

- The Division itself or its approximate equivalent in separate brigades.
- The Initial Support Increment (ISI)—the non-divisional combat and combat support units which are required for the support of the division from the inception of combat operations.
- The Sustaining Support Increment (SSI)—the additional non-divisional combat and combat support and service units required to sustain the division in combat indefinitely.

Generally, the composition of the ISI is comparable to the non-divisional support provided at the corps and field army levels, including such combat units as the armored cavalry regiments. The composition of the SSI is comparable to the theater level line of communication support furnished to field armies, including, for example, separate brigades for rear area security.

Normally, ISI units would deploy with the division itself and, therefore, would have the same readiness requirement. SSI units, however, may be required before, at the same time, or subsequent to the deployment of the division, depending on the particular situation. . . .

In peacetime, most of the SSIs of the STRAF divisions planned for use in areas other than NATO are maintained in the active structure so that the majority of these divisions could be deployed and sustained in combat without a reserve mobilization. The SSIs (and even some of the ISIs) for the STRAF divisions earmarked for NATO, however, can be provided by the reserve components, since we would definitely have to call up the reserves in the event of a war in Europe. Accordingly, these units could be mobilized to coincide with the deployment schedules planned for the divisions they are intended to support.

Shown in Figure 4 are the Army division forces planned for the end of FY 1969 (including the temporary augmentation for Southeast Asia).

We are now planning an Army force structure of 19–2/3 active and 8 reserve division force equivalents for end FY 1969, 1–1/3 more active division forces than planned last year for end FY 1968. One brigade force (i.e., 1/3 division force equivalent) was added to the previously planned structure in FY 1967, and one more infantry division force is being added in FY 1968.

Supporting Forces

The number of separate support brigades in the active force remain unchanged from that presented last year. However, we were planning then to bring the number of reserve brigades up to 16. Under the new reorganization plan, which I will discuss later, the number of separate brigades would be increased to 21, three of which would be in the Army Reserve and 18 in the Army National Guard.

The number of armored cavalry squadrons in the active force will remain at 34 through FY 1969. Five squadrons will be added to the reserve forces in FY 1968 as planned last year. We also have five air cavalry squadrons in the active force.

The number of artillery battalions in the active force in FY 1968-69 has been increased from that planned last year as a result of the recent augmentations of our forces in Southeast Asia.

We have reviewed again the requirement for artillery battalions in the permanent force, especially the composition and balance between the reserve and active structures. As a result of this review and our experience in Vietnam, we propose to add several heavy battalions to the active structure. With regard to the reserves, we have decided to increase the proportion of heavier artillery and hold the total battalions to a figure slightly below that planned last year.

The engineer construction battalion program is the same as last year, as is the active combat engineer program. The number of reserve combat engineer battalions has been reduced somewhat because an additional company was added to each battalion.

With regard to the surface-to-surface missile forces, we are still studying the requirement for these units and the proper mix of extended range Lance, Honest John, and Sergeant. Technical problems encountered in the development of the Lance propulsion system, however, have not yet been solved, and procurement has thus been limited to test missiles. The additional procurement funds requested for FY 1969 will be used for advanced production engineering, production facilities and test missiles. Moreover, the entire program will be reoriented to the extended range version of the Lance. This version will have an improved engine, which increases the maximum range with a nuclear warhead. Accordingly, we now propose to retain the Honest John battalions in the active force until a new plan for the surface-to-surface missile force is developed and approved.

The SAM-D, a new air defense missile system, has made substantial progress during the past year. . . . We are presently studying the question of replacing Hercules and Hawk with SAM-D.

The shoulder-fired Redeye missile, after much tribulation, has turned out to be an effective weapon against low flying aircraft and is now being procured for combat units.

. . . Between the end of FY 1961 and the end of the current fiscal year, the Army's active aircraft inventory and the pilot inventory will have nearly doubled. The presently planned inventory buildup should be essentially complete with the FY 1969 buy. The chief task for the future is to find some way to improve, significantly, the overall utilization of this huge inventory rather than the procurement of more helicopters.

The importance of fixed-wing aircraft in the Army inventory will continue to decline, and by FY 1971 they will constitute less than 20 percent of the authorized inventory. When the conflict in Vietnam ends, we plan to use the assets of the temporary, active Army aviation units to accelerate the buildup and modernization of the reserve component helicopter inventory.

Army Procurement

. . . I will touch on only a few of the highlights at this point. With respect to aircraft, the FY 1969 program is designed to replace attrition and equip the recently authorized temporary units without exceeding, except where absolutely necessary, the quantity required to support the permanent active and reserve units. On this basis, the Army would procure 1,304 aircraft in FY 1969.

Funds are also requested for the procurement of the first operational AH–56A Cheyennes, . . . This option covers the procurement of 375 aircraft over a four-year period.

Difficulties with the Shillelagh missile/gun system have caused us to limit FY 1968 production of the M–60 to those equipped with the 105mm gun and to cut FY 1968 procurement of the Sheridan. For FY 1969, we now propose to procure enough Sheridan and M–60 tanks, all with the Shillelagh missile/gun system, to maintain the minimum sustaining production rate for both vehicles. An additional quantity of M–60 chassis will be procured in both FY 1968 and FY 1969 for the armored vehicle launched bridge and the combat engineer vehicle.

. . . We still intend to complete the retrofit of a large number of other M–48s programmed in FY 1968 with new diesel engines and fire control equipment. These tanks, plus those already on hand, and those programmed in FY 1967 will meet all presently foreseeable needs for M–48s.

The first three pilot models of the new Main Battle Tank (MBT) have been delivered and are now undergoing testing. . . .

. . . Funds are requested to continue development of the MBT in FY 1969 and for production engineering to support a first procurement of operational tanks in FY 1970, pending an agreement between the U.S. and Federal Republic of Germany governments to go ahead with the program.

With respect to anti-tank missiles, production difficulties with the TOW, a heavy, wire-guided anti-tank weapon, which we planned to procure this year, have caused us to delay procurement until FY 1969. Advance production engineering funds have been included in the FY 1969 Budget for the new medium anti-tank missile, Dragon. . . .

Because of the relatively poor performance of the M–114 reconnaissance vehicle on the kind of terrain found in Vietnam and the limited armored threat to our forces in places other than Europe, we have decided to cancel the final (FY 1968) purchase of the 20mm Hispano-Suiza gun. . . .

Planned Army Division Forces End FY 1969

	End FY 1969		
	Div.	ISI	SSI
Active			
Overseas	14⅔	14⅔	10⅔
U.S.	5	5	1⅓
Total	19⅔	19⅔	12
Res. Components	8	8	15⅔
Grand Total	27⅔	27⅔	27⅔

Figure 4.

Reorganization of the Army Reserve Components

. . . We have made considerable progress in realigning the Army's reserve components to prepare them better for that essential role. A priority reserve force has been established with significantly higher levels of manning, equipping, training, and overall combat readiness. The reserve units for which no military requirements exists in contingency war plans have been or are being eliminated, and other units which are needed have been or are being added . . . . And, for the first time, the material and personnel requirements of the Army reserve components, which are required to support the contingency war plans, have been fully included in our programs . . . .

. . . The new structure will provide eight full division forces plus 21 separate brigades, together with the units needed to round out the active Army, provide for air defense, etc.—manned at approximately 93 percent or more of tables of organization and equipment.

Associated with the new structure is a total average paid drill strength of 660,000—400,000 in the Army National Guard and 260,000 in the Army Reserve—more than justified by military requirements but the number prescribed by the Congress in the FY 1968 Defense Appropriation Act . . . . No new procurement will be undertaken for these units; instead they will be furnished the necessary material from mobilization reserve stocks.

With the completion of these latest changes, I believe that we will have come close to achieving the basic goal set back in eary 1961, i.e., a reserve force tailored to the requirements of our contingency war plans and "so organized, trained and equipped as to permit their rapid integration into the active Army."

Navy General Purpose Forces

The Navy General Purpose Forces planned for the FY 1969-73 period are shown on the classified tables provided to the Committee. Except for the extension of the Vietnam-related force augmentations for another year and the addition of a battleship for this purpose, the major changes from the program planned last year concern the antisubmarine warfare (AS W) carriers, a new ASW aircraft, the expansion of the ASW detection system, and the escort program.

U. S. Army AH–56A Cheyenne.

Before turning to the detailed force proposals, however, I would like to comment on one general problem which permeates the entire shipbuilding and conversion program.

As you will see when we discuss the details of this program, disturbingly large cost increases and delays in commitment of funds have been encountered in recent years. For example, new construction ships in the FY 1969 Budget will cost, in most cases, 25 to 30 percent more than the most recently constructed similar type ship. Major conversion costs have also skyrocketed—in some cases nearly doubling. Apparently, most of the cost increases are related to the current market conditions. All shipyards are now carrying heavy workloads and large backlogs and as a result, private yards are charging higher prices to take on additional work. In part, this is because they, themselves, are paying more for labor and material. Subcontractors, too, are able to charge higher prices since the heavy workload virtually guarantees them a satisfactory level of business. Another factor undoubtedly contributing to the rise in costs is the additional quality assurance controls which we are now insisting upon in order to increase the reliability and maintainability of the equipment we buy.

In view of this situation, although we are planning within the Defense Department essentially the same size General Purpose Force ship construction and conversion program as previously scheduled, we are requesting funds only to the extent that they can be committed in FY 1969—a total of about $1.1 billion. . . .

As to the future, we are taking several measures to deal with the more fundamental, long term problem of ship construction and conversion. You will recall that I discussed in some detail last year the problem of technological obsolescence in our shipbuilding industry, both public and private, as compared with those of Northern Europe and Japan. With regard to the public sector, the Navy is now developing a plan to modernize its yards during the FY 1969–75 period at an estimated cost of $600 million . . . . Inasmuch as the details of this modernization program have yet to be fully worked out, only $53.7

million will be required in the FY 1969 Budget to initiate the effort.

With respect to the private yards, the Defense Department is attempting to offer American shipbuilders greater incentives to modernize their facilities and to increase their overall efficiency. The two most important techniques being used are multi-year contracts and "total package" procurements . . . . We now intend to broaden the use of multi-year contract awards to include all new ship construction susceptible to this approach. We also plan to use this technique in the modernization and conversion programs wherever feasible.

Of perhaps even greater significance over the long run is the "total package" procurement approach, under which the contractor is asked to bid on the whole "package", i.e., the design, development, and construction of an entire group of ships for delivery over a period of years. Our experience in the recent competition for the Fast Deployment Logistic (FDL) ship indicated that a multi-year "package" procurement can make a major yard modernization or the construction of an entirely new facility financially attractive to prospective bidders. Two of the three competing bidders included the construction of a new shipyard in their bid proposals, while the third would have undertaken major improvements to an existing yard. Estimates of total cost and delivery time for the 30-ship FDL program also show that one-year "package" procurement would be about 15-20 percent cheaper and up to 10-15 percent faster than a multi-year buy divided among two or three shipyards (i.e., 10-15 ships each).

We presently have two other "total package" multi-year procurements planned for major ship types, i.e., the amphibious assault ship (LHA) and new escort (DX/DXG) programs described last year . . . .

I also wish to reaffirm my view, expressed here last year, that there is no reason why the American shipbuilding industry should not be, in a technological sense, as good as the best any other country has to offer. We have the necessary technology and management knowhow—indeed, the series production and assembly line techniques being applied today in foreign yards were borrowed from us in the first place. While we may never overcome the foreign wage rate differential, intensive application of labor saving techniques and automation could reduce considerably the importance of this factor. I am convinced that a considerable improvement in efficiency and a reduction in shipbuilding costs are possible, if our disgracefully wasteful subsidy program is reorganized to reward efficiency and penalize inefficiency in ship construction and ship operation as well.

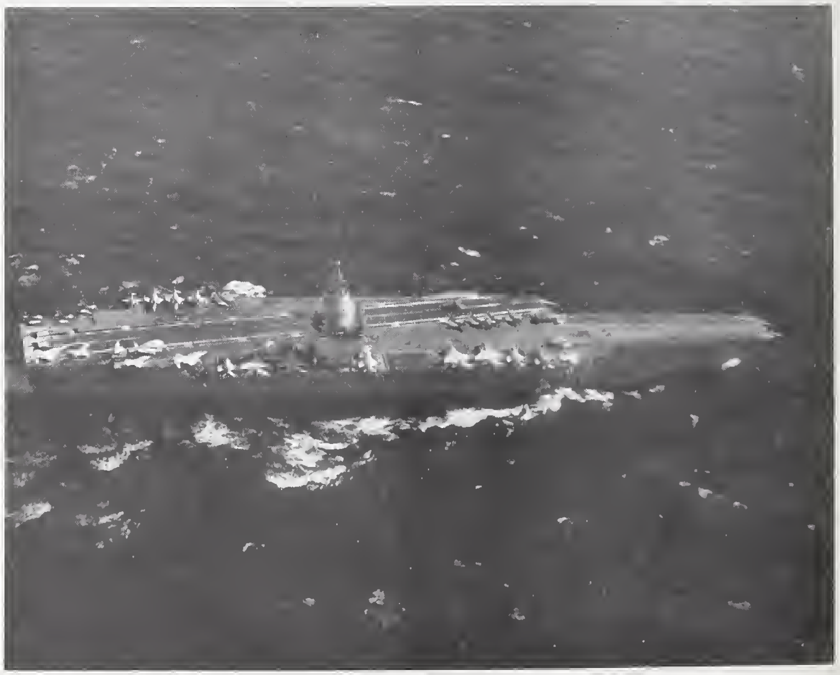
I urge the Congress to support the multi-year contract and total package procurement policies which are designed to reduce costs to the Government and to stimulate the modernization of a technologically obsolete industry.

Attack Carrier Forces

Our concept of the optimum size and configuration of the attack carrier forces has continued to evolve over the years in the light of new analyses and additional experience. . . .

Ships. As shown in the classified table provided the Committee, the attack carrier force at the end of the current fiscal year will comprise the nuclear-powered Enterprise, seven Forrestal, two Midway, and five Hancock/Essex-class carriers plus one carrier (Midway) in conversion. The newest of the conventionally powered CVAs, the John F. Kennedy, was launched this past year and is scheduled to enter the fleet in early FY 1969. A second nuclear-powered carrier, the Chester W. Nimitz, is currently under construction and scheduled to join the fleet in FY 1972 . . . .

As I have stated in past years, we plan to replace all the old Essex-class CVAs, building to a force of four nuclear-powered ships, eight Forrestal and three Midway-class carriers. Two additional CVANs, therefore, still remain to be built. The estimated cost of the Nimitz has risen 28 percent over last year's estimate ($428 to $544 million) and will amount to 96 percent more than the $277 million cost of the Kennedy. The price for the next CVAN promises be at least as high as the Nimitz. In order to keep the cost of the two additional CVANs as low as possible, we are considering designing all three as identical ships, permitting a savings of about $35 million on each of the last two ships. We are also studying whether the first two can be procured under a multi-year contract, with options for a third in FY 1971—in



USS Enterprise (CVAN–65).

order to take advantage of the cost saving potential inherent in this type of procurement. Due to the exceptionally long lead times required for nuclear components, we have been able to defer the major portion of the funding for the next CVAN to FY 1970, including in this budget request additional advance procurement funds primarily to continue work on the nuclear power plant.

Carrier Aircraft. As shown in the classified table provided the Committee, the fighter inventory at end FY 1968 will total 652 aircraft, mostly F–4s and the rest F–8s. . . . As a result of our experience in Southeast Asia, we now plan to retain the F–4 squadrons in the force throughout the program period in place of an equivalent number of attack squadrons. Thus, we will have two fighter squadrons per air wing, instead of just the one squadron as planned last year. When the F–111B is introduced into the fleet, it will be used for long-range fleet air defense and the F–4 for escort of attack aircraft.

Because of the continuation of the Vietnam conflict and the retention of the F-4s in the force, we now plan to keep the production lines open beyond the FY 1968 lead time, and the procurement schedule has been adjusted accordingly. The F–111B production schedule has been adjusted as a result of cuts in our appropriation request last year. . . .

We expect to achieve our presently planned fighter force objective in the early 1970s and later, when the last of the Essex carriers are phased out, the F–8s will be replaced with F–4s and F–111Bs.

The Navy is presently studying the next generation of fighter aircraft (VFAX) for the air superiority and escort missions. The Air Force has a project (FX) for an advanced fighter. . . . The major design configurations of the FX and VFAX (e.g., size of crew, amount and type of avionics and ordnance) are now being jointly studied by the Air Force and the Navy. Completion of concept formulation requirements is expected sometime in FY 1969 and is the prerequisite to a decision to proceed with contract definition. Funds have been included in the FY 1969 Budget to proceed with aircraft designs and preliminary work on the avionics and engine.

The attack aircraft inventory will total 1,076 at the end of the current fiscal year, and be composed chiefly of A–4s, A–6s, and A–7s. Since we have decided to retain two fighter squadrons per air wing, the number of attack squadrons previously planned has been reduced. Our ultimate goal will be achieved in the mid-1970s when the last A–4 squadron is phased out.

We have now extended the A–6 procurement, previously planned to end with the FY 1969 program, through FY 1970 in order to procure the aircraft needed to offset peacetime losses and hold the force level through the mid-1970s. The increased quantities now scheduled for FY 1969-70 also reflect another year of projected combat attrition.

We also propose to reduce the A–7 production program, reflecting the smaller number of attack squadrons in the present plan (the A–7 force level was reduced to compensate for the increase of F–4 squadrons) and the decision to buy a much improved version of this aircraft . . . . Although more expensive than the earlier A–7B, the A–7E's greater capabilities will allow us to reduce the squadron size from 14 aircraft to 12 while still increasing overall effectiveness. A–7E procurement was begun in FY 1967 with seven aircraft and continued in FY 1968 with 150 more. Funds for an additional increment have been included in the FY 1969 Budget.

In the reconnaissance category, current attrition projections indicate that the problem of maintaining an adequate force level will not be as serious as it appeared last year. We now believe that no additional measures will be required beyond the presently scheduled procurement of RA-5Cs in FY 1969 and FY 1970.

The major concern in the electronic countermeasures (ECM) category is again the EA–6B, an aircraft which promises significant improvements. . . . In view of the EA—6B's high cost and the increasing ECM capabilities of other aircraft, the overall procurement program has been reduced. Although advance procurement funds are requested in the FY 1969 Budget, we propose to defer further procurement until we are sure that the test aircraft bought in FY 1968 perform satisfactorily . . . .

ASW Forces

. . . Now, I would like to present the ASW force programs we propose for the FY 1969-73 period.

ASW Carriers. Last year I pointed out that the present CVS force is a relatively high-cost ASW system in relationship to its effectiveness. While the present fixed-wing S–2 is able to detect the presence of enemy submarines, it is lacking in kill capability, and the SH–3 helicopter, while efficient in locating and destroying enemy submarines, has only a limited operating range. Yet, the CVS force accounts for about 40 percent of all air ASW costs. As the newer ASW systems—the SSNs, DEs, P–3s, etc.—enter the ASW forces in larger numbers, the relative contribution of the presently equipped CVSs will continue to decline. It is clear, therefore, that if we are to continue to operate our CVS force at all, it must be modernized.

The question of whether to retain a sea-based airborne ASW capability received intensive study during the past year, and it now appears that the advantages and flexibility inherent in such a force would marginally warrant its continuation in the 1970s—provided that its effectiveness could be greatly improved . . . . Accordingly, we have decided to proceed with the development of the VSX, using the funds appropriated in FY 1968. Additional funds have been included in the FY 1969 Budget to continue the development of the engine, airframe and avionics. . . .

However, if we buy new ASW aircraft, the question of what to do about the carriers themselves immediately arises . . . . The Secretary of the Navy has considered this matter and has concluded that the best solution would be to modernize existing carriers, at an average cost of about $50 million each. Thus, our plan to continue a CVS force into the 1970s and proceed with the development, production and deployment of the VSX is based on the assumption that no new ASW carriers will be required. Indeed, if new ASW carriers were needed, increasing the number of landbased ASW patrol squadrons would be much more attractive alternative than the VSX.

The future CVS air group, as seen by the Secretary of the Navy, will consist of VSXs, helicopters, and a few fighter aircraft. E–1 aircraft may not be required, nor is development of a new type of large ASW helicopter currently foreseen.

In light of the decision to go ahead with the VSX and in view of the vast improvement in its performance vs. current ASW carrier-based aircraft, we now plan to reduce the CVS force to five carriers and four air groups when the Vietnam conflict is concluded. As additional P–3s enter the force and as the VSX replaces the S–2, the number of land-based patrol squadrons will be reduced accordingly . . . .

Attack Submarine Forces. At end FY 1968 the attack submarine force will number 105 submarines, 36 of which will be nuclear-powered. We have continued to encounter delays in this program, principally because of the submarine safety program, and the late delivery of materials and components. As a result, we will have fewer SSNs in the force at end FY 1968 than planned last year, but we expect to make up for this shortfall in FY 1969. To offset these slippages we will retain an equal number of conventionally powered submarines.

. . . We now propose to start two [new SSNs] in FY 1969 and two in FY 1970 (advance procurement funds for the latter are included in the FY 1969 request). This schedule will maintain the option of continuing the SSN construction program if new conditions should warrant. The Navy is also investigating the characteristics of new submarines which may be required to meet the potential threats of the late 1970s.

In addition to the SSNs, we currently plan to retain a sufficient number of conventional submarines to maintain the force at 105 ships.

Patrol Aircraft. At end FY 1968 our authorized ASW patrol aircraft inventory will total 411 aircraft.

As more of the newer P–3Cs become available and the older P–2s are phased out, we will begin to reduce the size of the patrol force . . . . By the early 1970s, seven of the planned squadrons will have P–3C aircraft, the rest being equipped with earlier P–3 models . . . . Funds are included in the FY 1969 Budget to continue procurement of these aircraft.

Sonobuoys. The effectiveness of ASW aircraft is heavily dependent upon the availability of sensitive and accurate sonobuoys. . . . One of these new devices, DIFAR, is now completing development and has demonstrated a major improvement in our localization capability. Funds to initiate production are included in the FY 1969 Budget. We also plan to continue procurement of the Julie/Jezebel and SSQ–47 sonobuoys and proceed with the development of an improved version of the SSQ–47.

Torpedoes. Although we are still experiencing some production difficulties with the MK–46, the new surface ship/air-launched ASW torpedo, by the end of this fiscal year the MK–46 will constitute a large percentage of our lightweight ASW torpedo capability. More of these torpedoes will be bought in FY 1969.

Fleet Escorts

During the last year we have intensively restudied the entire fleet escort force requirement. As a result of this study we now have a much better understanding of the numbers and types of escorts the fleet will need in the mid-1970s for antisubmarine warfare (ASW) and anti-air warfare (AAW). One of the major conclusions we have drawn from this study is that the ASW requirement should be the determining factor in computing the size of the escort force.

Taking this factor into account, we first computed our escort requirements on the basis of conventionally powered ships only. We determined the number of escorts required for each type of basic force—attack carriers, ASW carriers, amphibious groups, etc. Then we determined how many escorts should have an AAW as well as an ASW capability. These total "on-line" requirements plus an allowance for ships in overhaul gave us the total required by type, which are summarized in the classified table provided to the Committee.

In this calculation, the attack forces are provided the more capable 30-knot ASW/AAW and ASW escorts, since they represent the highest value target in the fleet. In the case of the "Advance" and "Assault" Amphibious Groups, the destroyer-type ASW escorts are assigned since this mission requires fire support as well as protection against enemy submarines. And, in view of the enemy's mid-ocean submarine-launched cruise missile threat to underway replenishment and amphibious groups, we now believe that missile-capable escorts should be included in each of these groups. Since amphibious groups will not be employed continuously, escorts allocated to this role can also be used for military convoys.

To meet the merchant ship convoy requirement, we plan to rely on the large number of escort ships in our

U. S. Navy P–3C aircraft.

reserve fleet and in the naval forces of our allies. . . . For example, Naval Reserve Training escorts which are kept in a high state of readiness could be available almost immediately, Category Bravo Naval Reserve ASW destroyer types could be activated, and there will be a large number of other destroyer types in the Category Charlie Reserves throughout the program period. Moreover, our allies have about 400 destroyer-type ships in their active fleets.

The new study, however, indicates that because of their capability for sustained high speed, four nuclear-powered ASW/AAW ships can take the place of six conventionally powered ships (three ASW/AAW and three ASW) in escorting a nuclear-powered attack carrier task force. The fact that the all-nuclear group can achieve the same degree of protection with fewer escorts helps to offset the substantially higher cost of nuclear ships. In spite of these savings, the all-nuclear force is still more expensive than the conventional force. However, we have already paid for four nuclear escorts. With these in hand, we need to build only five more to have two all-nuclear task groups. We believe we can build and operate these five nuclear ships for about the same cost as building the 10 new conventional escorts it would take to give the two carrier task groups the same degree of protection. This factor, taken together with the logistic economics inherent in all nuclear-powered escort forces, makes the nuclear-powered more competitive with the conventionally powered escort for certain purposes. Accordingly, we propose to provide two of the CVANs with nuclear-powered escorts. . . .

The proposed new escort ship program, entailing an investment of about $3 billion, presents us with a unique and more important opportunity to effect a major advance in the management of the Navy's shipbuilding and operating programs, ranging over the entire life cycle of ships—from design and development to construction, supply, maintenance and operation. All three classes of ships involved will have essentially the same operating profile and many of the same characteristics. By planning their procurement with the specific aim of achieving maximum efficiency and economy through commonality (except where the classes have to be different), we can not only save money, but also produce a more effective escort force through standardized training, better availability of spare parts, ease of modernization, etc.

Certainly, within each of the three classes, we can build identical ships. While each class of ship will differ somewhat in overall length and displacement, we expect them to have essentially the same internal and external arrangement and outfitting, the same navigation and communications systems, and virtually the same ASW and gun systems. Propulsion and machinery systems could also be common to the conventionally powered destroyers and guided missile ships, and the missile systems could be common to both the conventionally and nuclear-powered missile ships. . . .

Last year I described to you a new DX/DXG shipbuilding program intended to achieve the following objectives:

- Minimum total procurement cost through standardized design and serial production of large quantities of identical ships.
- Lower operating costs through design emphasis on automation and reduced manning levels.
- Increased reliability and reduced cost of repair, maintenance and logistic support through standardization.
- Maximization of the advantages of standardization and serial production through commonality between the DX and DXG wherever possible and economically feasible.
- Faster and cheaper construction and modernization or maintenance through the use of modular design of major component systems (e.g., weapon systems).

Now, in the light of the new requirements study, we have refined our concept of the desired characteristics of these ships. Whereas the DX had originally been envisioned as merely a more economical replacement for our present DE construction program, it now appears that this ship should be a larger, faster destroyer type. The DX now envisaged would be heavier than our present DEs and be fast enough to escort our attack carriers. It would also have guns for gunfire support missions, and a Basic Point Defense (Sea Sparrow) missile system for close-in air defense as well as the latest ASW equipment.

The DXG would be somewhat larger with the same speed and endurance, and for air defense it would have the new, more capable Tartar D system, which employs new fire control and search radars and the Standard missile. However, because it is the ASW rather than the AAW requirement which is controlling, we plan to install only one Tartar D system on each DXG. . . .

The DXGN would simply be a nuclear-powered version of the DXG and would be somewhat heavier.

It is worth noting that one of the FY 1968 DEs will be powered by a gas turbine engine which promises great improvements in economy and efficiency. We will consider the use of a similar power plant in the DX and DXG.

As I stated last year, we are going ahead with the construction of the FY 1967 DLGN. However, we now propose to include the FY 1968 nuclear-powered escort in the new DXGN program so that we can build five ships of the same class. . . . Accordingly, it is proposed that the FY 1968 DLGN be reprogrammed as the first DXGN and started when contract definition is completed. The remaining four DXGNs are programmed two in FY 1970 and two in FY 1971.

Funds are included in the FY 1969 Budget for five DXs, for advance procurement of long lead time items for the two DXGNs to be started in FY 1970, and for contract definition of the DXGN and the DXG. (Contract definition of the DX was funded in FY 1968.)

The missile ship modernization/conversion program is the same as I presented last year, except that we have rephased the program somewhat. Inasmuch as all of these conventionally powered cruisers will be retired by the mid-1970s, we have dropped the cruiser modernization previously planned for FY 1969. Funds are included in our FY 1969 request for one frigate conversion and for advance procurement for three more DLG conversions scheduled for FY 1970. The last five DD-931 class ASW modernizations are now scheduled for FY 1970–71.

Last year we began procurement of the Basic Point Defense Surface Missile Systems (BPDSMS). . . . An

Advanced PDSMS is currently in concept formulation, with contract definition tentatively scheduled for FY 1971. Additional funds are included in the FY 1969 Budget to continue procurement of the Basic PDS MS.

Amphibious Assault Ships

Last year we proposed to construct a new large amphibious assault ship, the LHA, which together with one or two LSTs could put ashore (by helicopters or boats) an entire Marine Corps battalion landing team, a job which now requires five amphibious ships. However, the Congress felt our request was premature in view of the uncertain state of the LHA's design, and the procurement funds were stricken from the budget. We have, in the meanwhile, proceeded with the contract definition phase for this ship, letting contracts to three firms. We expect to receive the proposals in January, and we should be ready to award a multi-year, total package procurement contract for the entire program early in FY 1969. Accordingly, funds for the first LHA and advance procurement of long lead time items for the next increment are included in the FY 1969 Budget.

The only other new construction remaining to complete our goal of a 20-knot lift capability for one and one-half Marine Corps division-wing teams is several more LSTs now scheduled to be funded after FY 1969. The Amphibious Force Flagship (A GC), which was tentatively scheduled last year for FY 1969, has been deferred to FY 1970, to permit the Navy to complete an extensive study of amphibious command and control requirements and to allow us to explore the possibility of modifying the AGC's design so that it could be used as a fleet commander's flagship as well as an amphibious force flagship. (The present fleet flagships are crusiers scheduled for retirement in the 1970s.)

Fire Support Ships

As I mentioned last year, the Navy is designing a new fire support ship (LFS) which would combine in one hull the accuracy and destructiveness of large caliber guns and the saturation fire of rockets. This ship could replace the gun cruisers, which are old and extremely expensive to operate, and the slow, old rocket ships. Funds are included in the FY 1969 Budget to initiate contract definition of the LFS.

Mine Countermeasure Force

As you know, last year we began a major rehabilitation program for all the existing ocean minesweepers (MSOs) designed to increase their effectiveness and add 10 years to their useful life at about half the cost of new construction. The first 9 MSOs were funded this year, and we have tentatively scheduled 10 more each year until the program is completed. The FY 1969 request, therefore, includes funds for 10 MSOs and advance procurement for 10 more.

The last of the planned new-construction MSOs were funded in FY 1968, and the first one will enter the force by end FY 1970. To complete the modernization of our mine countermeasure forces, we plan to build two more mine countermeasure support ships (MCSs). We presently have three, one of which has only a limited capability and is scheduled for retirement. While concept formulation is currently under way on these ships, we have decided to defer the program until FY 1970–71, when their characteristics will be better defined.

Logistic, Operational Support, and Direct Support Ships

We now plan a force of 210 ships in this category (Underway Replenishment, Fleet Support, Special Combat and Small Patrol) at the end of the current fiscal year and 222 at end FY 1969. In future years this number will drop slightly as a result of the delivery of the new, more effective underway replenishment ships which replace older ships on a less than one-for-one basis; and the reduced support requirements resulting from the decline in the size of the CVS force (after the termination of the Vietnam conflict); and the introduction of additional nuclear-powered surface ships.

We also propose to build 10 all-weather patrol boats (PBs) of a new type for use with the River Assault Squadrons in the Mekong Delta; nine will be procured with reprogrammed FY 1968 funds and the tenth is included in the FY 1969 budget request.

In order to take advantage of modern resupply methods and match the higher speeds of our latest ships, we plan to continue our long-range construction program to modernize the underway replenishment fleet.

In the Fleet Support category, funds are requested for one destroyer tender (AD) in FY 1969.

Marine Corps Force

The Marine Corps land forces shown in the classified table provided to the Committee are essentially the same as those projected last year, except that the temporary Vietnam-related deployments are extended through FY 1969.

With regard to the Marine Corps air wings, we plan to maintain the F–4 force throughout the program period at the current level. (The last few squadrons of F–8s will phase out by the end of this fiscal year.) Because of the significant improvements in payload, accuracy and effectiveness already achieved and currently programmed, we no longer plan to replace A–4s with A–7s. . . . The planned force level of A–6 aircraft will be achieved in FY 1969.

In the Reconnaissance/ECM area, the major change is the decision to procure EA–6A electronic warfare aircraft instead of EA–6Bs. Since the Congress has already provided funds in the FY 1968 Budget for this purpose, we are now proceeding with the procurement of EA–6As.

The Marines' tactical air control forces will remain at approximately the same level, although we plan to change their internal composition when the Vietnam conflict ends in order to make the best use of the aircraft available. The Air Force should have surplus O–2s available at that time for transfer to the Marine Corps to replace their present TA–4s. These TA–4s could be used by the Navy for advanced jet training instead of procuring new trainers at a cost of about $60 million.

Last year, we planned a permanent force structure of five medium (CH–46) and one heavy (CH–53) helicopter squadrons for each of the three air wings. We now believe we should plan four medium and two heavy squadrons per wing, which will provide the same lift capability at a lower cost. . . . The FY 1969 procurement program for the CH–46s and CH–53s reflects this shift in emphasis.

Experience in Vietnam has shown that the Marine Corps required improved fire support during air assault operations, especially for close-in suppression around landing zones. While we expect that the OV–10s now entering the force will be more effective than current fixed-wing aircraft in this role, we are also proposing procurement of AH–1G Huey Cobras in the FY 1969 Budget to provide a more effective armed helicopter and to replace losses of UH–1E observation and reconnaissance helicopters now used in the armed helicopter role.

Navy and Marine Corps Reserve Forces

The Navy will continue to maintain about 50 ships in the highly ready Naval Reserve Training Fleet (NRT). As more modern ships become available from the active forces, older NRT ships will be phased out.

The Navy also maintains a large number of inactive ships in the reserve, designated either Category B (Bravo) or Category C (Charlie) according to their physical condition and urgency of need upon mobilization. . . .

In addition, the Maritime Administration maintains a large number of ships (mostly noncombatant types) in the National Defense Reserve Fleet to meet potential Navy needs during wartime. It also maintains a reserve of merchant ships, which I will discuss later in connection with the Airlift/Sealift Program.

The Naval and Marine Corps Reserve fighter and attack units will have about 355 aircraft by end FY 1969, and they will be maintained at this level through the program period. . . .

Air Force General Purpose Forces

The composition of the Air Force's General Purpose Forces are shown in the classified table provided to the Committee. Again, let me remind you that the aircraft data refer to the total authorized active inventory (AAI).

Fighter and Attack

In the case of the fighter/attack aircraft, we are attempting in the near term to tailor the composition of the force structure and the procurement program to the changing demands of the Vietnam conflict. Over the longer term, our goal remains the same as in the past—a balanced force whose capabilities span the entire range of possible requirements.

Last year our long term force objective called for 24 aircraft wings equipped with F–4s, F–111s and A–7s. Now, however, as mentioned earlier in the discussion of the Navy's program, we plan to incorporate a new avionics system in the A–7. This system will so increase the A–7's bombing accuracy, that we believe we can eliminate one of the originally planned A–7 wings and still achieve an overall increase in the target destruction capability of the A–7 force. Accordingly, the longer range goal has been reduced to 23 wings, and the A–7 procurement program has been adjusted to reflect this reduction and a somewhat slower force buildup.

No change is presently envisioned in the ultimate size of the F–4 force. Tentatively, we plan to modify the avionics of the early model F–4s in order to improve their ground attack capability, and funds have been included in our FY 1969 request for the necessary development work. The F–4 procurement program has been adjusted on the basis of our latest attrition experience.

The first F–111 squadron will be operational by March 1968. We have decided to build up the F–111 force somewhat more slowly than planned last year in order to permit a more orderly phase-in of the "D" model. . . .

With respect to the F–105, lower-than-expected attrition will permit us to support a larger number than anticipated in the active force during FY 1968 and FY 1969. We now plan to retain several more squadrons in the force than formerly projected to offset the slower phase-in of A–7s. All of the B–57s will phase out of the force by end FY 1969 as scheduled.

For the more distant future, the Air Force will most likely require a replacement for the F–4 beginning some time in the latter part of the 1970s. As previously mentioned in connection with the Navy's program, funds have been included in our FY 1969 request to finance the Air Force's share of the joint FX/VFAX development program. The Air Force may also, ultimately, need to replace the A–7 with an aircraft especially tailored for the close support role. This requirement, however, is less certain. The FY 1969 Budget includes funds to support preliminary work on the long lead time subsystems which such an aircraft would require.

U. S. Marine Corps CH–53A heavy assault transport.

Tactical Reconnaissance

Last year our long-range objective for the tactical reconnaissance force included only the RF–4s and RF–101s. However, we had also tentatively planned to procure palletized reconnaissance packages which could be installed in the F–111, thereby giving it a reconnaissance capability. We now propose to procure a few squadrons of RF–111Ds specifically committed to the reconnaissance mission. . . . Development of the equipment is now under way and additional funds have been included in the FY 1969 Budget to continue the program.

The force structure for the RF–4 remains the same as projected a year ago. Lower-than-expected losses for the overall reconnaissance force, however, have permitted us to reduce the FY 1968 procurement program, but another year of projected attrition will require additional procurement in FY 1969-70.

Last year we had tentatively planned on keeping several squadrons of RF–101s in the active force structure and had scheduled the conversion of a number of F–101s to the reconnaissance role in FY 1969 so as to be able to maintain that force. With the introduction of the RF–111s, we now feel that all of the RF–101s (except those used for test purposes) can be phased out of the active structure. And, as a result of lower attrition, the planned of F–101 conversions has now been reduced.

Tactical Electronic Warfare Support (TEWS)

TEWS aircraft provide the tactical forces with specialized capabilities for active and passive electronic countermeasure operations, airborne radio direction finding, and paramilitary communications countermeasures. No change has been made in the EC–47 program from that shown a year ago, although we are adding some more EB–66s this year.

Night Warfare

The rising importance of night operations in Southeast Asia, coupled with the recent availability of improved illumination and sensing devices, has led us to create a special Night Warfare category in the tactical forces. By the end of the current fiscal year we will have a number of C–130s specially modified and equipped for this mission. . . .

Special Air Warfare (SAW) Forces

For post-Vietnam planning purposes, we are tentatively projecting a peacetime SAW force (in the active structure) consisting of C–123s, C–130s, U–10s and A–37s. This force would provide a quick reaction capability to meet one major counterinsurgency situation, an organizational base for expansion in a future emergency, and a mechanism for testing new concepts, tactics and equipment. The Vietnam-augmented SAW force is now scheduled to grow by about 10 percent in FY 1969.

Because of the large transfer of A–1s from the Navy to the SAW force, the buildup of the A–37 force to its planned level need not be achieved as early as previously planned. This, in turn, has enabled us to stretch out the procurement of A–37s, deferring a number of the previously planned FY 1968 quantity until FY 1969. This will provide a "hot" production line for a longer time, giving us the option of buying more aircraft later if that should prove necessary.

Tactical Air Control

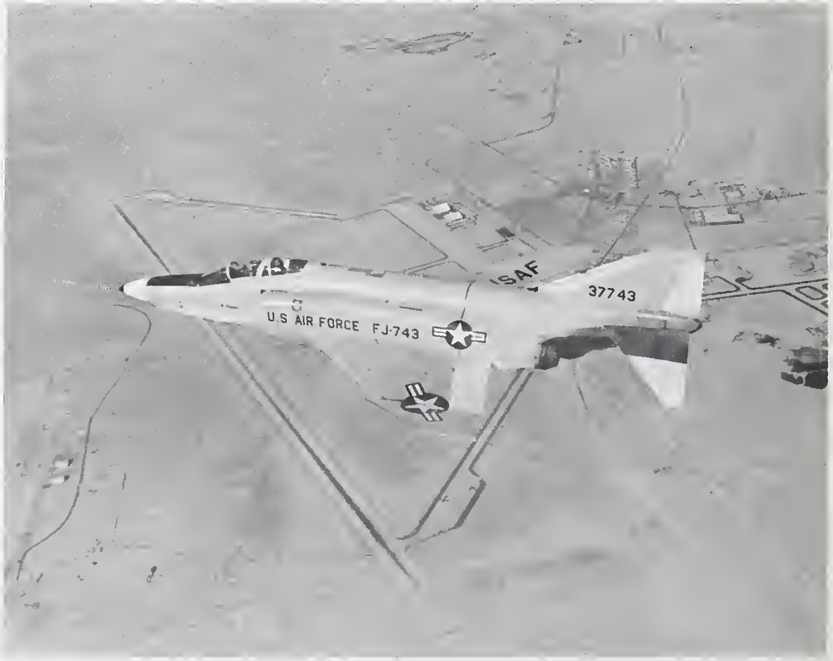
The long-range peacetime Tactical Air Control force is tentatively scheduled to consist of OV–10s and CH–3s. Presently the forward air control element of the force, augmented to meet the needs of the Southeast Asian conflict, consists primarily of O–1s and O–2s. The stepped up pace of operations in 1967 has generated a 10 percent increase in requirements for forward air control. To meet these needs, we increased our FY 1968 procurement of O–2s, and in FY 1969 we propose to buy additional aircraft. The O–1 aircraft are scheduled to phase down in FY 1969 as the OV–10 force reaches its programmed strength and both the O–1 and O–2 will phase out completely after the conflict is over. The EC–135s, also a part of the temporary Vietnam augmentation, are employed as airborne command and control aircraft to help coordinate strikes over North Vietnam. They will be dropped from the force when this mission is over.

Tactical Missiles

The 18 Mace B missiles in Germany will be phased out on schedule during FY 1969 as Pershing takes over the quick reaction alert role. The rest of the Mace B force is currently scheduled to be retained in the force, at least for the next few years.

Air National Guard

The long-range peacetime force structure objective for the Air National Guard's fighter force has been adjusted on the basis of our



U. S. Air Force RF–4C aircraft.

most recent attrition data. As currently planned, the force will be composed of 4 F–105 and 19 F–100 squadrons. However, since we must now plan on retaining more F–100s and F–105s in the active force to help support another year of combat in Vietnam, the Guard's buildup will be delayed commensurately. To help offset this delay, the Guard will retain the F–84s, F–86s and F–104s somewhat longer than previously planned.

We now plan to build the Guard's reconnaissance force from the present level of 208 aircraft to 223 aircraft by the end of FY 1971, phasing in RF-101s from the active force and retiring the RF–84s. The Guard's SAW force presently consists of about 60 aircraft (C–119s, HU–16s and U–10s) and is tentatively scheduled to remain at about this level throughout the program period. Eight EC–121s being transferred to Guard operations in FY 1968 will provide a reserve capability for tactical electronic warfare.

As you know, nine F–100 squadrons, four RF–84 squadrons and one Tactical Air Control unit of the Air National Guard have been authorized additional manning and training so that they can maintain a very high level of combat readiness. We propose to continue this program through FY 1969.

Theater Air Base Vulnerability

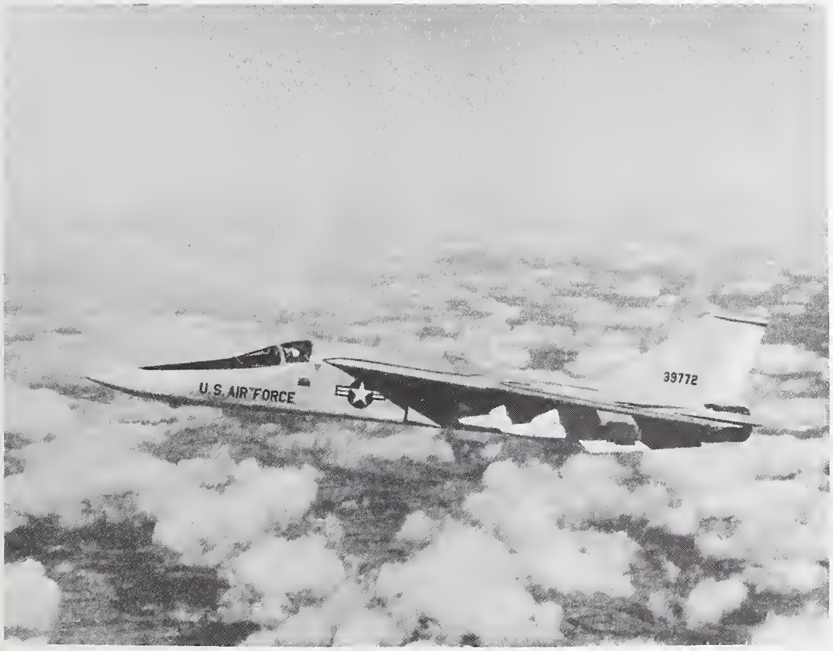
Over the past year, the great importance of adequate protection for air bases and aircraft in forward areas has again been dramatically demonstrated in the Middle East and in Southeast Asia. In a few hours of lightning strikes against the Arabs' unprotected air bases and aircraft on June 5, Israel annihilated the Arab air forces and achieved absolute air superiority in the combat zones for the duration of the six-day war. Moreover, in South Vietnam, where enemy hit and run mortar attacks against U.S. air bases have continued, the passive defensive measures we have taken have greatly reduced the potential losses.

The reduction of an air base's vulnerability involves such diverse measures as aircraft revetment or sheltering, rapid runway repair, the hardening of POL and communications facilities, camouflaging, and improved perimeter defense for the base itself. In South Vietnam where the principal threat is from mortar and rocket attacks, revetments have been provided for all our tactical aircraft, and rapid runway repair kits have been in use for two years. Steps have also been taken to increase perimeter security. In Thailand, all the B–52s have been revetted, and all tactical aircraft will be revetted by the end of the current fiscal year.

In situations such as South Vietnam, where the enemy has not demonstrated a capability for air strafing and bombing, revetments alone may be adequate against the residual threat of intermittent rocket or mortar attacks. But for our other overseas bases, particularly those in Europe, where the enemy poses a strong air threat, roofed shelters are required to give adequate protection against aircraft attack. As I mentioned in former years, the Air Force has developed and successfully tested a prefabricated metal and earth-mounded shelter which would provide excellent protection against anything but a direct hit by a conventional bomb, and some protection in a nuclear attack. These shelters would cost between $130,000 and $160,000 (depending on whether they were equipped with blast resistant steel doors)—only a fraction of the value of the aircraft they would protect—and together with the active defense by our Chaparral and Hawk missiles and our Vulcan guns would provide a strong integrated defense for our overseas aircraft.

Thus far, while the Congress has appropriated funds for runway repair materials and equipment for various physical security measures, our past requests for aircraft shelter construction have been denied. This reluctance to make fixed investments overseas has, no doubt, been related to recent uncertainties with respect to the size and location of our future overseas deployments. In Europe, those uncertainties have now been eliminated as the effects of the relocation from France have been absorbed.

Consequently, we believe that our tactical aircraft basing plans for Europe are now reasonably firm for the foreseeable future. We are, therefore, again requesting funds ($17.4 million) for the Theater Air Base Vulnerability Program in FY 1969. These funds will provide 60 shelters at European bases. As presently planned, the total program would provide shelter for 515 aircraft together with a complete complementary set of other vulnerability reduction measures. I strongly urge the Congress to approve the FY 1969 request.



U. S. Air Force F-111 aircraft.

Airlift and Sealift Forces

The Airlift and Sealift Program comprises: the Military Airlift Command's strategic airlift aircraft; the Air Force's tactical airlift aircraft assigned to the Tactical Air Command and the Unified Commands; the transport and tactical airlift aircraft in the reserve components of all the Services; certain cargo and transport aircraft of the Navy and Marine Corps; specialized transportation forces, such as aeromedical evacuation units and aerial port squadrons; and the troop ships, cargo ships, tankers and "Forward Floating Depot" ships operated by the Military Sea Transportation Service (MSTS).

Last year I noted that the lift mission consists of two principal tasks: the strategic requirement for transportation support of overseas military operations, and the tactical requirements for intra-theater and assault airlift.

Strategic Movement

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As I noted in the preceding section of this statement, the most demanding contingency which we use for planning our forces is a rapid deployment to Southeast Asia to counter a conventional attack and a simultaneous reinforcement of our forces in Europe. We have, therefore, used this case to test the relative effectiveness of the Fast Deployment Logistic (FDL) ship force and its principal alternatives in the rapid response role in the projected environment of the mid-1970s. In such a serious situation, it is reasonable to assume that the U.S.-owned commercial fleet would be requisitioned and available without delay. However, in more limited contingencies, this would not necessarily be true, nor would it necessarily be desirable. Accordingly, we have also examined the requirements for such a more limited contingency.

After testing a wide range of various combinations of airlift, sealift and prepositioning, we have found that the force which give us the required capability at the least cost consists of: six C–5A squadrons, 14 C–141 squadrons and 30 FDLs; prepositioned equipment in Europe and in the Pacific; a Civil Reserve Air Fleet; and 460 commercial general cargo ships.[a]

However, we have also examined three variations of the recommended force:

- The force without the FDLs.
- The force without the FDLs, but with more privately owned and operated merchant ships which would normally be employed in commercial liner service and subsidized in the amount of the FDL program cost.
- The force without FDLs, but with an enlarged MSTS-controlled fleet obtained by long-term charter (at a cost equal to the FDL program) of privately owned and operated vessels designed specifically for military cargo and used exclusively for defense business in peacetime as well as wartime.

Under the first alternative—no FD Ls—we would not be able to respond as fast as we would wish in the first few weeks of a combined European/Southeast Asian contingency. The significance of a prompt response was illustrated by our experience in the Korean war, where we came close to being pushed off the Korean peninsula before we were finally able to stem the attack and secure a beachhead for later reinforcement. What prevented this from happening was the availability of three U. S. divisions in Japan. After North Korea invaded the South on June 25, 1950, we were able to move the first of these divisions into action by D+14 and two additional divisions by D+23. However, the first division deployed from the continental United States to Korea did not arrive until D+56. We managed to build up to five divisions (although understrength and without substantial support elements) by D+60 and seven divisions by D+70.

Under the second alternative—an enlarged subsidized merchant fleet—we would be able to respond somewhat faster but not fast enough to meet the desired schedule. Moreover, dependence on commercial shipping would mean deployment of our forces in piecemeal fashion because the ships employed would be too small to preserve the unit integrity of troops and equipment. This shortcoming is important because unit integrity largely determines the military effectiveness of the first combat forces arriving in the theater of operations.

In contrast, 12 FDLs would lift an infantry division's equipment with its initial support increment and necessary supplies, while it would take 33 C–5 type ships (the largest commercial cargo ships being built today) to do the same job. Moreover, the FDL force will carry its own lighterage and helicopters for moving the equipment ashore rapidly wherever needed, even in the absence of port facilities. The FDL will also carry sufficient POL to fuel all vehicles before discharge, thus facilitating their rapid exit from port or beach and avoiding confusion and delay in the supply line.

The third alternative—the long-term charter of private ships—while better than the first two, would still not fully meet the desired schedule. Because these charter ships would be used in regular peacetime service, carrying defense cargo, they could not offer the same responsiveness as the FDLs.

Thus, neither of the two equal cost alternatives to the FDL force can do as well in meeting the requirements of a rapid deployment strategy. Moreover, the kinds of ships which they would employ lack many of the functionally unique operating characteristics which make the FDL ideally suited to the rapid response mission.

One objection that has been raised to the FDLs is, in fact, an objection to any kind of rapid response capability. The argument has been made that because of the rapid response capability provided by the FDL, we would be tempted to intervene in many situations where our long-range best interests would dictate otherwise. I want to emphasize that the FDLs, per se, would in no way add to or subtract from our commitments. But as long as we adhere to a policy of fulfilling our treaty commitments, we should be prepared to do so with the minimum political and military risks and the minimum cost in lives—that is why the FDL program is unanimously recommended to the Congress by the Chiefs and the Secretaries of each of the Services, as well as by Mr. Nitze and myself.

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[a] *These are "national" ships with a capacity of 15,000 measurement tons, a speed of 15 knots, a five-day load or unload capability and 10,000 round-trip distance factor.*

As you will have noted from the foregoing discussion, even with the FDLs, we would need a substantial assist from the U. S. commercial fleet in order to meet the rapid response requirement. Last year, as a result of our Vietnam experience, I discussed at some length our concern about the availability and cost of such shipping in future emergencies. Subsequently, the Committee of American Steamship Lines, representing most of the subsidized U. S. Merchant Marine, proposed a new program which would guarantee that emergency sealift to meet defense requirements would be made available according to predetermined arrangements. Encouraged by this industry initiative, we have continued to study the problem, working with industry, the Department of Transportation, the Federal Maritime Commission, and the Maritime Administration. Using the original industry proposal as the starting point and adding the best of the proven features of the Civil Reserve Air Fleet (CRAF) program, a new plan was developed.

This plan, known as the RESPO ND Commercial Sealift Augmentation Program, is designed to ensure timely sealift augmentation from commercial sources in future emergencies according to prearranged contractually defined commitments, administrative arrangements and prices. It is based on three fundamental concepts. First, as originally proposed by industry, a prior commitment to provide emergency sealift augmentation would, in the future, normally be a prerequisite to sharing in the award of defense peacetime business. Second, a cost-based rate schedule for Defense Department cargo would be established for each trade route. Finally, defense cargos would be allocated so as to reward both the operator's efficiency and his mobilization commitment. However, within this broad framework, there is still a considerable amount of work to be done in developing specific procedures. To this end we are currently engaged in joint studies and consultations with industry looking toward partial implementation of the program in FY 1969, with full implementation to be completed in time for the award of contracts on the new basis in FY 1970.

Tactical Movement

Within the theater of operations, equipment and supplies are moved by a variety of means, only one of which, intra-theater airlift, need concern us here. For a number of reasons, the requirement for this type of lift is particularly difficult to establish with any degree of precision.

Our approach to this problem has been, essentially, to analyze our present capabilities and compare them with possible intra-theater lift requirements in the same contingency situations which we use to establish our General Purpose Force and strategic lift requirements. Intra-theater airlift serves two major missions: support of the air line of communications, i.e., the air movement of equipment, supplies and personnel within the theater of operations; and the tactical movement of combat units with their equipment in areas where road or rail transportation is not available. With respect to the first mission, about one-fourth of all equipment and supplies being moved within Vietnam today go by air—earlier in the war, it was one-half. With respect to the second mission, about one-tenth of the tactical airlift missions are for combat unit movements (i.e., the equivalent of moving one battalion per division per week).

Our study shows that about half of the aircraft in the planned C–130 force could support simultaneously the two separate contingencies postulated earlier. The rest of the planned C–130 force would provide a capability to handle minor contingencies, to support allied forces, and to support deployed Navy and Marine Corps forces. The C-141s, of course, can also be used for intra-theater and airborne operations, and adequate shortfield capabilities are provided by the presently planned force of C–7As and jet-augmented C–123Ks.

Thus, on the basis of our present understanding of the requirement, it does not appear that any additional intra-theater airlift capability need be procured at this time.

Air Force Airlift

The airlift forces currently planned through FY 1973 are shown in the classified table furnished to the Committee.

Active Forces

In the active forces, the planned deployment schedules for the C–5A remains the same as a year ago. . . . Funds are included in the FY 1969 Budget for another 27 C–5As.

By end FY 1968, the C–141 force will reach its planned strength of 14 squadrons.

As previously mentioned, one-half of the present C–130 force should be able to provide an adequate intra-theater airlift capability in the active force. Therefore, we plan to start phasing large numbers of the older C–130s into the reserves in FY 1970, and by end FY 1973, the active force will consist of 14 squadrons of the "E" model, plus one squadron of the ski-equipped C–130Ds. Thirteen of these C–130E squadrons will be modified with the Adverse Weather Aerial Delivery (AWAD) radar system to give them an accurate night and all-weather airdrop capability. We did consider once again the question of procuring additional C–130Es in view of the Congress' appropriation of funds for this purpose last year. However, the present inventory, as re-equipped, should be able to meet all important needs into the mid-1970s, when we may want to introduce a new intra-theater transport. To this end, the FY 1969 Budget includes funds to start contract definition of a Light Intra-theater Transport (LIT) to provide an appropriate replacement for the C–123 and the C–7A aircraft in the mid-1970s.

In order to retain more outsize cargo capability during the early stages of the C–5A force buildup, we now plan to hold two C–124 squadrons in the force a year longer than previously scheduled. And, to augment the capability of the active force to operate from short airfields, we tentatively plan to transfer several squadrons of the jet-augmented C–123Ks from the Special Air Warfare forces to the regular airlift force structure.

Air Force Reserve

The FY 1967 Supplemental Appropriation Act directed that Air Force Reserve continue to maintain a force of 40 troop carrier and airlift groups through FY 1968, and this will be done. For the future, however, I am convinced that the structure of the

Reserve's airlift force should be determined solely by our military requirements and the most efficient use of all our airlift resources, including our skilled Reserve personnel. As a result, we have made a number of changes in the forces planned for FY 1969-1973.

The most significant of these is not reflected on the force table. The C–141/C–5A force, which we have programmed for the early 1970s, will be capable of considerably higher daily utilization rates in an emergency, providing the additional crews and support personnel can be made available. Thus, if reserve component skills could be used to raise the sustained utilization rate of our most modern transport (which are in the active forces), especially in the crucial early days of an emergency, this would be potentially far more valuable than the contribution of reactivated reserve units equipped with older, less efficient aircraft. In order to test this concept, we are converting a former C–119 group to a C–141 "associate" unit which will train with the aircraft in an active squadron. If this test proves successful, it will give us a good way to maintain and capitalize on the skills of our reserve component personnel without having to retain costly inefficient older aircraft in the structure. Accordingly, we have tentatively scheduled the conversion of four more C–119 squadrons to "associate" C–141 units in FY 1969.

In order to prepare for the introduction of C–130s into the reserve, a special dual-purpose squadron of eight aircraft is being created this year, using the personnel of two former C–119 units. This squadron will provide combat crew training for both active and reserve personnel and at the same time constitute a reserve airlift unit capable of mobilization if needed. Thus, the C–119 force will be kept at 18 squadrons through the end of the current fiscal year, phasing down to 10 by end FY 1969 and out of the structure completely the following year. Thirty-six Air Force Reserve squadrons are retained through FY 1969 as follows: 10 C–119, 19 C–124, 5 C–141 (associate), 1 C–130 and 1 C–130A CCTS without aircraft.

The first large quantities of C–130s would be received by the Air Force Reserve in FY 1970 as the force builds to five squadrons, replacing C–124 squadrons. In FY 1971-73 the remaining C–124s would be phased out and the C–130 force built up to 13 squadrons.

Air National Guard

The FY 1967 Supplemental Appropriation Act also directed that the Air National Guard (ANG) should be maintained at not less than 25 airlift groups during FY 1968, and this will be done. As in the case of the reserve, however, the ANG's future airlift force structure should be determined by the test of military need.

Of the 26 airlift groups in the ANG structure at the end of FY 1967, three were C–124 units and one was a C–123 unit which are scheduled to remain in the force for the next few years. Five were C–121 groups which will all be converted to aeromedical evacuation or tactical electronic warfare missions—two in FY 1968 and three in FY 1969. Seventeen were C–97 units, which we plan to phase down to 11 by end FY 1968, to six by end FY 1969 and out of the force completely in FY 1970. However, the six being phased out this year are being converted to C–124 groups, giving us a total force of 26 at end FY 1968, including two C–121 groups converted to other missions. In FY 1969, one more C–97 group will convert to C–124s. The end FY 1969 position will reflect 22 squadrons; 17 airlift, 4 aeromedical evacuation, and 1 tactical electronic warfare. The accelerated transfer to C–130s from the active force will allow the ANG to convert four C–97 squadrons to this aircraft by end FY 1970 instead of one as planned a year ago, with the full 12-squadron force being reached in FY 1973 as the last of the C–124s are retired.

Navy Airlift

This year for the first time we are showing the Navy's airlift elements in this program instead of the General Purpose Forces.

At end FY 1968, the Fleet Tactical Support category will consist of 86 aircraft, including C–1/C–2 COD (Carrier on-Board Delivery) aircraft, C–118s, C–130s and C–131s. In FY 1969, the present COD force will decline from 41 to 37 aircraft and hold at that level through the rest of the program period. We believe that the 24 C–118s now in the force can be retired and their mission assumed by the Military Airlift Command; 12 would phase out in FY 1969 and, pending a review of their missions, the remainder would be eliminated the following year. Seven C–130s and 14 C–131s would remain in the force throughout the program period providing an organic non-scheduled lift capability for special Navy missions.

The present Marine Corps airlift structure consists of 71 aircraft, including C–47s, C–54s, C–117s and KC–130s. We believe that the intratheater capabilities of the regular airlift force should be able to meet the Marine Corps' needs and, therefore, have tentatively scheduled the phaseout of all but the KC–130s for tactical aircraft and combat transport needs.

The Navy's present reserve airlift structure consists of 77 aircraft, including C–54s, C–118s and C–119Fs. We plan to phase the C–54s out of the force completely in FY 1970 as the C–118 force builds up to 50 through transfers from the active forces. Seventeen C–119Fs would be retained throughout the program period to provide an organic assault transport capability for the Marine Corps Reserve's aircraft wing.

Sealift

Following a successful contract definition competition for the Fast Deployment Logistic Ship Program, which was completed last July, the Navy is now preparing a biddable package based on the selected proposal. Assuming Congressional authorization of the program late this spring, negotiations will be conducted with the contractor whose proposal was selected. If these negotiations are successful, a contract could be ready for award promptly after final Congressional appropriation action. If unsuccessful, the entire biddable package would be offered to the industry at large. Funds for four ships are included in the FY 1969 request, and we tentatively plan on 10 more in FY 1970 and eight in each of the two following years. Under the revised schedule the first four FDLs would enter the force in FY 1972, with subsequent deliveries being made at the rate of one a month.

Research and Development

Included in this major program are all of the research and development efforts not directly identified with weapons or weapon systems approved for deployment. I have already discussed some of the more important research and development projects earlier in this statement, in connection with the military forces they support. Dr. Foster, the Director of Defense Research and Engineering, will discuss the details of the program later. What I would like to do now is to concentrate on some of the larger and more fundamental problems involved in this area of the defense effort.

Overall Policy Matters

In the seven fiscal years, 1962–68, we have devoted a total of $47 billion in new obligational authority to research, development test and evaluation, and we are requesting $8 billion for this purpose in FY 1969. These amounts include not only the cost of research and development projects in this major program, but also the continuing development costs of systems already approved for deployment and, therefore, included in other major programs. Nevertheless, these are very large sums and the trend over the years has been rising, as has been the case in Federal research and development expenditures, generally. Thus, the interest of the Congress in this program is quite understandable. . . .

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After examining all the evidence in this area for some years, I believe we should be willing to give first priority in the research and development program to a reasonable, sustained level of research spending, taking into account the inevitable price and wage increases from year to year. During FY 1965-68, after adjusting for inflation, Research funding declined. But it is quite clear that we must now reverse this trend and support more vigorously many scientific fields that show great promise and clear relevance to our future security. It is on this basis that I have recommended a total of $450 million for Research in the FY 1969 Budget, $79 million more than the amount provided by the Congress for FY 1968 but only $37 million more than the amount available for FY 1967. The FY 1969 figure represents about a 31 percent increase over FY 1962, or an average of about four percent a year over the entire seven-year period.

The management problems involved in Exploratory Development are also complex. As I have stated to this Committee on previous occasions, I have never been fully convinced that we are getting full value from this $1 billion a year effort. (Funds devoted to this purpose rose from $956 million in FY 1962 to $1,158 million in FY 1964 and have since declined to about $948 million in the current fiscal year.) . . . Although this area of work is also subject to rising price and wage levels, I am not sufficiently confident that we have a coherent enough grasp of the overall program to recommend an increase commensurate with the rise in costs. Accordingly, I am recommending a total of $980 million for Exploratory Development in FY 1969, approximately the amount originally requested for FY 1968.

It is extremely important that no new major systems developments be started until the basic components and technology are in hand. This is one of the principal purposes of Advanced Development efforts. It is in this category that we develop many of the major components of new systems—engines, avionics, airborne radars, penetration aids, etc. It is also here that we develop the experimental prototypes prior to commitment to full-scale development. The V/STOL aircraft is an excellent example of both of these types of Advanced Development. During the last seven years, we have invested a total of several hundred million dollars in the development and construction of a wide variety of V/STOL prototype aircraft, using different design approaches. None of them proved to be both technically and operationally feasible. Indeed we found that, technologically, the pacing item was the engine, and that until we had a suitable engine, none of the approaches were likely to produce a successful aircraft. Accordingly, beginning in FY 1966, we concentrated our resources on engine development and, through FY 1968 we devoted almost $70 million to this project; additional funds will be required in FY 1969. Whether this engine will solve the problem is yet to be demonstrated, but at least we have resisted the temptation to embark on a full-scale development before the required technology and basic components were at hand.

Another good example is the AWACS, the Advanced Airborne Warning and Control System. . . . This radar has been under development in the Advanced Development category since FY 1966. Experiments last year demonstrated the necessary capacity for discrimination. Therefore, we are proceeding in FY 1969 with AWACS.

In some cases advanced developments turn out to be so successful that they can be moved immediately into production or even into operation. The heavy lift helicopter is a good example of the latter. Six experimental prototypes were constructed with Advanced Development funds. They proved to be so successful that when we needed such a heavy lift capability in Vietnam we were able to deploy four of these six helicopters for operational use. A somewhat different example is the Over-the-Horizon radar. The first prototype radars were fabricated under the Advanced Development program —i.e., they were procured with RDT&E funds—but they are now being used to provide an interim operational capability.

Projects in the Advanced Development category are managed on a line item basis. Each project of any significance is individually reviewed in the Office of the Secretary of Defense and individually managed by one of the Services or Defense Agencies. I believe that we have this area of the research and development program under reasonably good control. The total amount of funds devoted to Advanced Development fluctuates within a fairly wide range from year to year, as new projects are started and older projects are dropped or moved into the Engineering Development or Operational Systems Development categories. Thus the totals shown for Advanced Development in the classified table furnished to the Committee do not reflect any meaningful trend over the years. For FY 1969 we are requesting a total of $1,023 million for this purpose.

While Research and Exploratory Development are not directly related to immediate military requirements, a full-scale Engineering or Operational Systems Development can be justified only in terms of its potential contribution to our strategy, considering both its cost and its military effectiveness, as well as the cost and effectiveness of any other available alternatives. . . .

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Because the content of the Engineering Development category changes significantly from year-to-year as new projects are started and older projects mature, the trend in overall funding is not very meaningful. But to round out this discussion, I would simply like to mention that for FY 1969 we are requesting a total of $856 million, compared with $923 million in FY 1968 and $1,011 million in FY 1967.

For Management and Support—which includes the operation of the test ranges and research and development laboratories, services provided by such organizations as Rand and Aerospace Corporation, etc.—we have included $1,689 million in the FY 1969 Budget.

We are also requesting for FY 1969 an appropriation of $125 million for the Department of Defense Emergency Fund, plus $150 million of transfer authority. For many years, FY 1959-64, the Congress provided a total of $150 million in appropriations and $150 million in transfer authority for the Emergency Fund. In the FY 1965-67 period the appropriated amount was reduced to $125 million, and in FY 1968 to $100 million. I believe this downward trend must now be reversed. The Emergency Fund provides the Defense Department a very essential degree of flexibility, especially at times when our forces are engaged in combat and new, unanticipated technical requirements continually arise.

As you know, we have been financing and managing the special research and development requirements of the Southeast Asia conflict through the PROVOST Program. But each year we have had to add to the amount requested for that program in the initial budget. . . . While we are requesting $522 million for PROVOST in FY 1969, we can be sure that new requirements will arise during the year which will have to be financed from some other source. And, the most important single source of financing for such anticipated but indefinite requirements is the Emergency Fund. I, therefore, strongly urge the Committee to appropriate the full amount request for FY 1969. . . .

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Two related general problems in the research and development program, which have apparently troubled the interested Congressional Committees for some time, are the role of the Federal Contract Research Centers (FCRC) and our expenditures for "studies and analyses," which now make up a large part of the work of some of these centers. Over the years the Committees have focused their attention on some 16 of these FCRCs. Seven of them, however, are relatively small university groups which perform essentially the same kind of research as many other Defense-sponsored university groups. The remaining nine can, in turn, be divided into three categories: Mitre and Aerospace Corporation, which are essentially Air Force systems engineering organizations; the Massachusetts Institute of Technology Lincoln Laboratory and the Johns Hopkins Applied Physics Laboratory, which are specialized research groups in the physical sciences; and the Institute for Defense Analyses (IDA), RAND, Research Analysis Corporation (RAC), the Center for Naval Analyses (CNA), and Analytical Services, Inc. (ANSER) which are essentially operations and systems research organizations. . . .

As I noted earlier, studies and analyses constitute a very important part of the work of these and other defense contractors. In FY 1967 we spent a total of $51.0 million for this purpose. In FY 1968 the Congress provided only $45.2 million. While this approximately 10 percent reduction may seem small in relation to the total, the rise in costs over the period has accentuated its impact. Nevertheless, we have carefully reviewed all studies and analyses proposed for FY 1969, and we have included in our budget request a total of only $46.4 million, about $1 million more than the amount appropriated by the Congress last year, but almost $9 million below the original request for FY 1968. To obtain even tighter management control over this category of activities, we now require that each such study must be approved by the level of command empowered to implement the findings. Moreover, the principal official responsible for research and development in each Service will now periodically review all such studies and analyses both for budget purposes and for implementation.

The Department of Defense Space Program

Inasmuch as the various elements of the Defense Department space effort are included in several program and budget categories, I have followed the practice of assembling all of them in a summary table (which is classified and has been provided to the Committee) and discussing the program as a separate entity. . . .

The largest project in the Defense Department Space Program is the Manned Orbiting Laboratory (MOL), for which $431 million was provided last year and $600 million is requested in FY 1969. . . .

As indicated by our budget request, FY 1969 is expected to be a peak year of activity in the MOL program, including the completion of a major portion of the structural test programs on flight hardware, continued fabrication of hardware for the first three flights, developmental test firings of the seven-segment solid motors for the Titan III M, and installation of the ground equipment in the launch complex.

For development work on the Defense Satellite Communications and Tactical Satellite Communications programs (including the procurement of satellites and advanced terminals), we have included a total of $60.4 million in the FY 1969 Budget (exclusive of work at the Lincoln Lab, $11.4 million which is funded separately). . . . Development work on this new improved, higher-power, synchronous satellite is scheduled to be initiated in FY 1969. Concurrently, we will continue our programs to upgrade our present satellite communications terminals and initiate development of advanced land, sea and air terminals. . . .

A Tactical Satellite Communications Program (TACSATCOM) UHF satellite was successfully launched in 1967 and placed in an equatorial, near-synchronous orbit, with all systems operating properly. Another UHF satellite capable of multiple access operation (i.e., numerous stations using the satellite simultaneously) will be launched in mid-1968. The development and fabrication of a new, larger experimental tactical communication satellite is now in progress. . . . For the longer-range future, the Services are studying the requirements for an operational system, and desired technical features which are identified by this effort will be included as objectives in the present research and development test program wherever possible.

The next item, for which $10.5 million is requested in the FY 1969 Budget, comprises the space-related portion of the VELA nuclear test detection program. (Another major part of this program is the Large Aperture Seismic Array which is used to monitor underground nuclear detonations.)

The next item, the Navy's navigation satellite system, for which funds are requested for FY 1969, permits ships to determine their location promptly and precisely by observation of orbiting satellites which continually broadcast their own position. The major portion of the FY 1969 request is for the procurement of new satellites, and for the operating and maintenance costs of the launches and four tracking stations (two of which are used to inject orbital data into the satellite's memory bank for rebroadcast).

Research and development funding for the Anti-Satellite System has been completed, and funds requested for FY 1969 will provide for its normal operating costs.

The funds for space Geodesy will support tri-Service efforts to provide precise information about the earth's size, shape and gravity field.

The early versions of the Titan III space boosters have already entered the operational inventory. The Titan III B (Agena) was put into production over a year ago, and the Titan III C followed last summer, after having demonstrated its reliability and capability over two years of flight testing. These Titan vehicles will be used for many of our high-priority space shots over the next few years. Meanwhile, development work will continue on the previously mentioned Titan III M launch vehicle for the MOL program. Development was also initiated this past year on a new Titan III D configuration to provide greater thrust. Funds are included in the FY 1969 Budget to support all of these Titan III programs.

The funds requested in FY 1969 for Agena D will continue the effort I described last year to increase Agena D for the heavier satellite payloads now projected as well as to improve its payload and orbit adjusting capability. . . .

The "Spacecraft Technology and Advanced Reentry Test" (START) program, which has largely (and very much less expensively) replaced the Dynasoar program cancelled in FY 1965, is developing multi-purpose reusable spacecraft and reentry vehicle technology, and presently comprises three major efforts: Project PILOT; the high performance maneuverable reusable spacecraft; and expandable structure airlocks and encapsulation techniques.

Project PRIME, completed last August, comprised a series of flights of a small maneuverable lifting body, the SV–5. These flights demonstrated the feasibility of returning data capsules from orbit by means of a spacecraft capable of highly accurate maneuver over large lateral ranges and at extremely high altitudes to precise recovery areas where they could be aerially retrieved. . . .

Project PILOT, an extension of the PRIME experiment, is designed to investigate the characteristics of a full-scale maneuverable manned lifting body at slower speeds and lower altitudes, including a detailed examination of its landing characteristics. The first PILOT flight is scheduled for this summer. The data obtained from PRIME and PILOT, when taken together, will help provide a technological base for the future development of a reusable, maneuverable spacecraft for returning astronauts from space. . . .

The third effort under this program includes the development and test of expandable structures for use as airlocks (in order to permit ingress or egress from a spacecraft without depressurizing the whole vehicle), and the exploration of encapsulation techniques for the return of data to earth from orbit.

"Advanced Space Guidance," for which funds are requested in FY 1969, is a program which seeks to improve our autonomous space navigation capabilities by supporting research and equipment development in such areas as: the reliability and accuracy of inertial guidance systems; horizon sensors; star and landmark trackers; and the on-board determination of astronomical data.

The fund request for "Advanced Liquid Rocket Technology" supports the sole remaining program of this type not only in the Department of Defense, but in the nation. The two projects in this program involve the development of a reusable upper stage cryogenic liquid engine for use in recoverable spacecraft, and a high-performance fully throttleable hydrogen/fluorine engine.

The "Ground Support" category, for which $249 million is requested in FY 1969, is that portion of the costs of the missile ranges, test instrumentation, and satellite detection and tracking systems which is charged to space activities. The last two categories, "Supporting Research and Development" and "General Support," constitute the overhead of the military space program and consist of prorated portions of the costs of a wide range of space-related activities. About $1,039 million has been included in the FY 1969 Budget for these purposes.

In total we are requesting about $2,216 million for the Defense Department's space effort in FY 1969, about $267 million more than FY 1968 and about $552 million more than FY 1967. Most of this increase is related to the MOL program.

Other Major Programs

For purposes of presentation, four major programs covering support-type functions have been grouped together in this section.

Intelligence and Communications

This program comprises the centrally directed defense intelligence and security functions, communications, and other special activities conducted by the Services, which are directly related to the missions of the combat forces in the Strategic, General Purpose and Airlift/Sealift programs, but which are more easily managed in homogenous functional groupings of similar or complementary activities than by distribution among the relevant programs.

Intelligence and Security

The FY 1969 Budget includes funds for our on-going intelligence and security programs. Because of their special sensitivity, they are not discussed in this unclassified statement.

National Military Command System

The National Military Command System (NMCS), the primary subsystem of the World-Wide Military Command and Control System, is designed to provide the means for exercising strategic and operational direction of the Armed Forces in time of crisis or under conditions of limited or general war. The NMCS comprises the National Military Command Center (NMCC) at the Pentagon, the Alternate National Military Command Center (ANMCC), the National Emergency Command Post Afloat (NECPA), the National Emergency Airborne Command Post (NEACP), and the communications linking these command facilities with the unified and specified commands and Service headquarters.

With respect to the NMCC, we have expanded its automatic data processing capacity to handle the increased workload related to Southeast Asia operations and to meet other needs. The FY 1969 Budget provides funds for a still further improvement in data processing capability which will permit the NMCC to maintain, under all conditions, up-to-date information on operations being conducted by the unified and specified commanders, the disposition of friendly forces, and the enemy order of battle.

With respect to the NECPA, we propose to upgrade the automatic data processing and communications equipment on the Northampton to give it capabilities comparable to its sister ship, the Wright. This new equipment should be operational by January 1969. A third tropo-scatter communications station at Lola, N.C., will be completed this year, further extending the operating range of the NECPA ships.

With respect to the NEACP, VLF/LF transmitting systems are being installed in the EC–135J airborne command post aircraft. These communications systems can be used in a nuclear environment for the transmission of emergency orders.

Communications

The communications category includes both the Defense Communications System (DCS) and certain non-DCS communications operated by the Military Departments. The DCS elements include the world-wide, long-haul, owned and leased, point-to-point wire, cable, radio and satellite communications facilities. Its two principal elements are the Automatic Voice Network (AUTOVON) and the Automatic Digital Network (AUT ODIN), but it also includes other systems, some of which are discussed here. The non-DCS elements include: the tactical portions of these communications systems which serve the subordinate commanders of unified commands, or which are self-contained within tactical organizations; self-contained local communications facilities such as those serving an individual Army base; land, ship and airborne terminal facilities; and ship-to-ship, air-to-air and ground-air-ground systems. Also included in this category is the COMSEC program which comprises our efforts to protect telecommunications and certain other communications systems.

The AUTOVON System is essentially a direct dial telephone system served by a number of switching centers. Our present plans call for expanding AUTOVON to 93 switching centers by 1972—19 overseas, 9 in Canada and 65 in the United States—a reduction of one from last year's plan. We are also continuing the expansion of the AUTODIN System, and by the end of FY 1968 we should have 19 switching centers in operation, substantially completing the planned world-wide system of 20 switches. This system will be able to handle more than 40 million punch cards daily, greatly facilitating defense management in such areas as command, supply, inventory, control, personnel, finance and intelligence.

The Phase I portion of the Automatic Secure Voice Communications Network, scheduled to be completed during FY 1969, will provide manual and automatically switched secure voice communications to about 1,850 subscribers, about 450 more than planned a year ago. This system will consist of three prototype VOCOM switches and other automatic and manual switches, including the Talk Quick Southeast Asia system, organized in a single integrated complex.

Last July three operational satellites were added to the space segment of the Initial Defense Satellite Communications System (IDSCS), along with an experimental satellite. One of the three operational satellites failed to function properly, giving us an operating system of 17 satellites and 28 terminals as of December 1967. By end FY 1968, 36 terminals (including 7 aboard ship) should be operational. This initial system provides from one to eleven duplex voice channels, depending on the equipment and operating conditions. This system also provides an emergency capability for transmitting high quality photographs within hours rather than days. It is expected that this emergency capability will be converted to an operational capability in early FY 1969. Improved equipment for both the space and ground terminal portions of the system are being developed in the research and development program.

In addition to the systems already approved for operational deployment, there are a large number of other communications projects in research and development. One such project, Mallard, is a cooperative international effort to develop and produce a major tactical (trunking and distribution) communications system for possible use within the field armies of the United States, the United Kingdom, Canada and Australia. Such a system would provide secure, fully automatic, switched communications in the battle area. Other projects include the development of both light-weight and heavy transportable communications packages for possible use in areas where adequate military or commercial communications do not exist.

Other Specialized Activities

The "Intelligence and Communications" program also includes certain mission-related activities, such as weather service, oceanography, and aerospace rescue and recovery.

Weather Service. The Naval and Air Force Weather Services operate a global network of facilities for gathering and analyzing climatological and geophysical data and for disseminating forecasts in support of all DOD components and the National Aeronautics and Space Administration's space program. They also collect nuclear debris air samples for the Atomic Energy Commission in connection with the test ban treaty safeguards, and operate hurricane and typhoon tracking services.

Our capabilities in this area have been significantly enhanced during the past year by the addition of a number of new satellite and surface-based data acquisition systems, including: the National Operational Meteorological Satellite System, which provides cloud cover pictures that can be received directly by military ground and ship-based terminals; the Application Technology Satellite, which provides cloud cover photographs and processed weather and oceanographic charts from a stationary orbit; two new VELA satellites which augment the space and environmental data of the Solar Observing and Forecasting Network (SOFNET) stations as well as performing nuclear test detection functions; and the addition of three new solar telescopes to SOFNET to permit continuous surveillance of the sun, as assessment of the effects of solar flares on satellite and other space operations and of the effect of magnetic storms on communications. SOFNET also provides data for the Over-the-Horizon radars and for calculating satellite orbits.

Oceanography. This program, together with portions of the general intelligence and research and development programs (e.g., mapping, charting and geodesy, and deep submergence), comprises the Navy's activities in the field of ocean science and technology. The size and scope of our undersea survey, research and technology programs have been increased considerably in recent years.

The Navy, of course, has long conducted oceanographic and charting surveys in support of both operational requirements and research and development programs. The Oceanography program includes the activities of the Navy's Oceanographic Office, the Naval Observatory, Defense support of the National Oceanographic Data Center, and their related research aircraft and survey ships which are engaged in a broad range of missions. For example, ocean-wide surveys provide oceanographic and acoustic data to support ASW and undersea warfare systems in controlling the strategic ocean areas of the world, while marine geophysical surveys provide acoustic propagation loss data for support of new long-range sonars.

At end FY 1968 the Oceanography program will have 10 oceanographic research ships and three environmental prediction research aircraft. The new AGS oceanographic survey ship funded in FY 1967 and orginally expected to be commissioned by end FY 1969 has slipped somewhat and will now enter the force in FY 1970, along with the two new small AGORs (oceanographic research ships) funded last year and subsequently transferred from the research and development program. We presently plan to build seven more oceanographic ships over the program period, and by end FY 1973, we should have 13 ships, nine of which will have been commissioned since FY 1966.

The closely related Mapping, Charting and Geodesy program collects hydrographic, magnetic and gravitational data and will include 13 oceanographic survey vessels and two specially equipped aircraft at end FY 1968.

The major research and development effort in this area is the Deep Submergence Program which is designed to improve man's ability to live, work and conduct salvage and rescue operations beneath the sea. The program includes the "Man-in the-Sea" project which is concerned with developing the technology to permit "saturated" divers to live and work at depth of 600 feet (and later 1,000 feet) for periods up to a month or more. The SEALAB series of experiments in underwater habitation are a part of this effort, and SEALAB III will be conducted at 450 feet and 600 feet depths in 1968. Another project is concerned with developing self-propelled, highly maneuverable personnel rescue vehicles which will be able to reach disabled submarines in any part of the world. The prototype vehicle is currently under construction, and a total of six are planned. An emergency rescue capability with the first vehicle is expected by early FY 1969. These vehicles will have a 5,000-foot diving capability so they may also ultimately be used for underwater search operations. Also under development is an even deeper diving search vehicle for operation down to a depth of 20,000 feet.

Air Rescue and Recovery. The Air Rescue and Recovery Program comprises the Air Force Aerospace Rescue and Recovery Service (ARRS) and certain specialized forces of the other three Services. Only the Air Force has a specifically designated sea and air rescue service; the other Services assign helicopters and fixed-wing aircraft to this mission on an as-needed basis. . . .

The Air Force ARRS operates and maintains 15 air rescue squadrons consisting of about 130 aircraft, and has about 140 additional aircraft assigned to various bases for local short-range rescue activities. Of the 15 ARRS rescue squadrons, three are presently deployed in Vietnam. These squadrons presently comprise 11 HC–130 fixed-wing aircraft and 32 HH–43, 22 HH–3 and 6 HH–53 helicopters. Past procurements will permit the addition of another four HH–53s to these forces by end FY 1969. To meet project HH–3/HH–53 attrition, funds for the procurement of 14 additional HH–53s have been included in the FY 1969 budget. . . .

The Navy maintains helicopters with a search and rescue mission on all aircraft carriers (including some LPH helicopter carriers) and cruisers, but most of these helicopters have other missions as well. In addition, the Navy has created a special rescue detachment of 12 helicopters in the Gulf of Tonkin—half deployed aboard destroyers on coastal patrol and half aboard one of the carriers on Yankee Station. The FY 1969 Budget includes funds for 27 UH-1Es for the Navy's search and rescue mission.

For the future we have a number of studies underway aimed at improving our combat aircrew recovery capabilities. These include new designs for rescue aircraft, better methods for night time search and rescue operations, and improved escort and suppresive fire tactics.

Nuclear Weapons. The Defense Atomic Support Agency (DASA) provides: operational, logistic and training support for the Military Services on nuclear weapons; liaision with the Atomic Energy Commission on the development of nuclear weapons; management of the national nuclear weapons stockpiles and the stockpile sites; conduct of nuclear effects tests; and specialized staff assistance to the Secretary of Defense and Joint Chiefs of Staff on these matters. The nuclear weapons effects tests and research, funded as part of the Research and Development Program, are designed to characterize the phenomena associated with nuclear detonations, their effect on military systems, and the means of countering these effects. While some of these effects can be simulated in the laboratory, others require actual underground tests, and the FY 1969 Budget includes funds for both activities. . . .

Training and Medical

This program includes training, medical and other activities associated with personnel, except where such activities are an integral part of another program. . . .

Training

Individual training, from recruit instruction to professional education, is a large and important defense activity. Training costs in FY 1969 will rise only slightly to $4.4 billion from the $4.3 billion of FY 1968 now that the period of rapid force buildup is over and manpower levels are expected to stabilize.

Recruit Training. Recruit training loads in FY 1969 are expected to remain at about current levels. We now estimate that about 883,000 recruits will enter basic training in FY 1969. Of the FY 1969 total, the Army will train about 535,000; the Air Force about 128,000; the Navy about 136,000; and the Marine Corps about 84,000. . . .

Technical Training. Enlisted personnel in the four Services are currently receiving advanced training for some 1,500 occupational specialities. Technical training usually requires an average of two months of classroom instruction, although proficiency in some specialties is acquired on the job and for a few highly technical occupations up to a year may be needed.

Since the beginning of the buildup in July 1965, we have been faced with a sharply increased requirement for junior non-commissioned officers (particularly in the combat branches) and for technical supervisors. To alleviate this problem, the Army has instituted a new accelerated program designed to meet the added requirements for non-commissioned officers and technical supervisors in short tour areas by providing this training in some 70 military occupational specialties. This training will be provided to about 50,000 men in FY 1968–69. . . .

Professional Training. In order to fulfill the growing requirements for officers with advanced education in scientific, engineering, managerial and professional military fields, the Services provide for professional training at the postgraduate level in both military and civilian schools The military schools include the various Service command and staff colleges, the Service war colleges and the joint Service colleges, where over 3,000 students are enrolled (including foreign military officers and U.S. civilians). For specialized scientific and technical graduate education, the Services as a matter of policy send officers to civilian institutions whenever feasible. At the present time about 2,800 officers are enrolled at these civilian schools. In addition, the Naval Postgraduate School and the Air Force Institute of Technology (accredited, degree-granting military graduate schools) provide Service-oriented graduate education to approximately 1,700 officers.

Pilot Training. Pilots are among the most highly trained and skilled personnel in the Military Services, and flight training is the most expensive kind of instruction given by the Defense Department. We are now spending over $1.5 billion annually for pilot training. In addition to the combat aircraft used for advanced flight training, we are using 8,000 training aircraft, representing an investment of about $6 billion, for undergraduate and other non-combat flight training. . . .

Total Defense Department pilot production has been increased each year, from a low of 3,292 in FY 1962 to a total of 10,586 expected in FY 1968. A total output of 13,317 pilots has been provided in the FY 1969 budget.

Service Academies. We are continuing our program to increase the output of the Military Academy. In FY 1969 we expect enrollment will average about 3,800 cadets, and by 1971 we should be able to reach our goal of 4,400. To accommodate this larger enrollment, we will continue the expansion of facilities with the construction in FY 1969 of new barracks for 1,364 cadets.

At the Naval Academy enrollment in FY 1969 will remain at about 4,100 midshipmen, roughly the same level as in the past few years. Construction funds are requested in FY 1969 to prepare suitable sites for future library and engineering buildings, a laboratory complex and a new auditorium.

The Air Force Academy is also building its enrollment toward an ultimate goal of 4,400. In FY 1969 we anticipate an average enrollment of about 3,400 cadets. No new major construction will be undertaken at the Air Force Academy in FY 1969.

Medical Services

Medical Services include those costs for medical and dental care not directly related to military units in the other major programs, the costs of providing medical care for authorized personnel in non-military facilities, veterinary services, and the operation of various health service activities such as the medical centers, preventive medical units and the Armed Forces Institute of Pathology. The annual operating costs of these facilities and services now exceed one billion dollars a year. . . .

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Table No. 1

Department of Defense

BUDGET SUMMARY—FY 1969

(Millions of Dollars)

	FY 1967	FY 1968	FY 1969
Total Obligational Authority (TOA):			
Military Personnel	20,067	22,199	23,037
Operation & Maintenance	19,361	20,548	22,839
Subtotal—Operations	39,428	42,747	45,876
Procurement	24,110	22,378	25,816
Research, Development, Test & Evaluation	7,289	7,415	8,031
Military Construction	1,160	1,505	1,440
Family Housing	439	604	538
Civil Defense	101	86	77
Special Foreign Currency Program	4	—	16
Subtotal—Military Functions	72,532	74,735*	81,794
Military Assistance	904	484	620
Total—TOA	73,436	75,219*	82,414
Financing Adjustments	−712	−1,907	−2,617
Receipts and Funds Transactions	268	43	−221
New Obligational Authority (NOA)	72,992	73,355*	79,576
Expenditures	68,331	74,219*	77,113

* Of these amounts, $796 million of TOA/NOA and $782 million of expenditures are for the pay increases enacted in the fall of FY 1967. Provision for these pay increases was included in the Contingency item in the FY 1968 President's Budget, rather than in the Department of Defense section.

OASD (Comptroller)
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Table No. 2

Department of Defense

REVISION OF FY 1968 BUDGET

(Millions of Dollars)

	Amount submitted to Congress Jan 1967	Amount enacted	Revision January 1968		Pay and postal increase suppl.	Other adjustments	Revised Amount
			Increases	Decreases			
Total Obligation Authority (TOA):							
Military Personnel	22,001	21,782	230	412	600	—	22,199
Operation & Maintenance	19,136	18,856	1,918	386	164	−4	20,548
Subtotal—Operations	41,137	40,638	2,148	799	764	−4	42,747
Procurement	24,013	23,237	3,787	4,652	7	—	22,378
Research, Dev., Test & Eval.	7,523	7,468	622	702	26	—	7,415
Military Construction	2,144	1,517	—	—	3	−15	1,505
Family Housing	823	700	—	—	*	−96	604
Civil Defense	111	86	—	—	—	—	86
Special Foreign Currency Program	16	11	—	11	—	—	—
Total—Military Functions	75,766	73,657	6,557	6,164	800	−116	74,735
Military Assistance	621	425	—	—	—	59	484
Total—TOA	76,387	74,082	6,557	6,164	800	−57	75,219
Financing Adjustments	−1,159	−1,566	−504	111	—	52	−1,907
Receipts and funds transactions	—	—	—	—	—	43	43
New Obligational Authority (NOA)	75,228	72,516	[a] 6,053	[a] 6,053	800	38	73,355

* Less than 500,000.

[a] Includes $1,695,600,000 proposed transfers among the military personnel, operation and maintenance procurement and research, development, test and evaluation (RDT&E) appropriations as contained in the Budget revision shown in the President's FY 1969 Budget.

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Table No. 3

Department of Defense

FINANCIAL SUMMARY BY PROGRAM AND MILITARY DEPARTMENT

(Billions of Dollars)

	FY 1961	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967	FY 1968	FY 169
Strategic Forces		11.3	10.4	9.3	7.1	6.7	6.9	7.9	9.6
General Purposes Forces		17.9	17.9	17.9	19.1	29.5	32.7	32.6	35.2
Intelligence and Communications		3.2	3.9	4.3	4.5	5.0	5.3	5.7	6.3
Airlift and Sealift		1.0	1.1	1.1	1.4	1.6	1.9	1.9	1.8
Guard and Reserve Forces		1.8	1.7	1.9	2.0	2.3	2.7	2.7	3.0
Research and Development		4.3	5.0	5.0	4.7	4.8	4.8	4.6	5.1
Central Supply and Maintenance		3.8	3.9	4.1	4.2	5.6	7.1	7.1	7.3
Training, Medical, etc.		4.9	5.1	5.5	5.9	7.5	8.5	9.4	9.8
Administration and Associated Activities		1.1	1.1	1.2	1.2	1.8	1.5	1.6	1.7
Military Assistance		1.9	1.7	1.3	1.3	1.9	2.5	2.1	2.7
Unfunded (—) Current Service Retirement Pay		—0.8	—0.7	—0.7	—0.5	—0.5	—0.4	—0.3	—0.1
Total Obligational Authority (TOA)	46.0	50.4	51.2	51.0	50.9	66.2	73.4	75.2	82.4
Financing Adjustments	—2.9	—1.0	—0.1	—0.1	—0.4	—2.6	—0.4	—1.9	—2.8
New Obligational Authority (NOA)[a]	43.1	49.4	51.1	50.9	50.5	63.5	73.0	73.4	79.6
Expenditures[a]	44.7	48.2	50.0	51.2	47.4	55.4	68.3	74.2	77.1
Expenditures as Percentage of GNP	8.8	8.9	8.7	8.4	7.3	7.8	9.0	9.2	8.9
Department of Army	10.4	12.7	12.0	12.5	12.3	18.6	22.5	24.2	26.1
Department of Navy	12.7	14.6	14.7	14.4	14.8	19.4	21.5	21.1	24.0
Department of Air Force	19.9	19.6	20.4	20.0	19.4	23.5	24.7	25.1	27.0
Defense Agencies	1.1	1.2	2.0	2.3	2.5	2.9	3.3	3.8	4.2
Defense Family Housing	0.4	0.5	0.6	0.6	0.6	0.6	0.4	0.6	0.5
Military Assistance	1.5	1.8	1.6	1.2	1.2	1.2	0.9	0.5	0.6
Total Obligational Authority	46.0	50.4	51.2	51.0	50.9	66.2	73.4	75.2	82.4
Military Personnel	12.1	13.1	13.1	14.2	14.8	17.0	20.1	22.2	23.0
Operation and Maintenance	10.3	11.4	11.5	11.7	12.5	15.4	19.4	20.5	22.8
Procurement	14.2	16.2	16.1	15.1	14.2	22.4	24.1	22.4	25.8
Research, Development, Test and Evaluation	6.4	6.3	7.0	7.1	6.5	6.9	7.3	7.4	8.0
Military Construction	1.0	0.9	1.3	1.0	1.0	2.5	1.2	1.5	1.4
Defense Family Housing	0.4	0.5	0.6	0.6	0.6	0.6	0.4	0.6	0.5
Military Assistance	1.5	1.8	1.6	1.2	1.2	1.2	0.9	0.5	0.6
Other		0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Obligational Authority	46.0	50.4	51.2	51.0	50.9	66.2	73.4	75.2	82.4

Notes:

(1) FY 1968 TOA and NOA amounts include proposed supplemental appropriations to finance recently enacted legislation: $600 million for military pay increase; $196 million for civilian pay increase and $4 million for postal rate increase. Also included are adjustments for inter-appropriation transfers of $1,695,600,000 as contained in the budget revision shown in the President's FY 1969 Budget.

(2) FY 1969 TOA and NOA amounts include $75 million for proposed legislation.

[a] Includes, for FY 1967 and subsequent years, adjustment for trust fund and receipts transactions.

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January 29, 1968

Table No. 4 **Department of Defense**

DIRECT BUDGET PLAN (TOA), NEW OBLIGATIONAL AUTHORITY (NOA), AND EXPENDITURES

Fiscal Years 1967–1969

(Millions of Dollars)

	Direct Budget Plan (TOA)			New Obligational Authority (NOA)			Expenditures		
	FY 1967	FY 1968	FY 1969	FY 1967	FY 1968	FY 1969	FY 1967	FY 1968	FY 1969
Functional Classification									
Military Personnel									
Active Forces	17,318	19,192	19,786	17,426	19,192	19,786	17,054	18,850	19,600
Reserve Forces	918	935	953	951	935	953	902	890	905
Retired Forces	1,831	2,072	2,275	1,839	2,072	2,275	1,830	2,060	2,265
Proposed Legislation	—	—	23	—	—	23	—	—	23
Total—Military Personnel	20,067	22,199	23,037	20,216	22,199	23,037	19,787	21,800	22,793
Operation and Maintenance									
Basic	19,361	20,548	22,787	19,434	20,548	22,787	19,000	19,800	22,213
Proposed Legislation	—	—	52	—	—	52	—	—	47
Total—Operation & Maintenance	19,361	20,548	22,839	19,434	20,548	22,839	19,000	19,800	22,260
Subtotal—Operations	39,428	42,747	45,876	39,650	42,747	45,876	38,787	41,600	45,053
Procurement	24,110	22,378	25,816	22,871	20,716	23,254	19,012	21,470	23,445
Research, Dev., Test, and Eval.	7,289	7,415	8,031	7,172	7,148	8,006	7,160	7,200	7,800
Military Construction	1,160	1,505	1,440	1,098	1,405	1,430	1,536	1,565	1,450
Family Housing	439	604	538	507	691	602	482	520	570
Civil Defense	101	86	77	101	86	77	100	93	89
Special Foreign Currency Program	4	—	16	7	—	13	—	2	6
Working Capital Accounts	—	—	—	535	118	—	512	1,400	−1,614
Military Assistance	904	484	620	782	400	540	873	550	525
Receipts and Funds Transactions	—	—	—	268	43	−221	−129	−181	−211
Total—Department of Defense	73,436	75,219	82,414	72,992	73,355	79,576	68,331	74,219	77,113
Department or Agency									
Department of the Army	22,438	24,129	25,974	22,876	23,502	25,150	20,961	23,988	24,869
Department of the Navy	21,522	21,110	23,928	20,669	20,212	22,981	19,246	20,801	22,014
Department of the Air Force	24,708	25,052	26,969	24,195	24,410	26,003	22,918	24,582	25,447
Defense Agencies/OSD	3,763	4,358	4,770	3,970	4,545	4,830	4,241	4,230	4,169
Civil Defense	101	86	77	101	86	77	100	93	89
Proposed Legislation	—	—	75	—	—	75	—	—	70
Total—Military Functions	72,532	74,735	81,794	71,809	72,755	79,116	67,466	73,694	76,658
Military Assistance [a]	904	484	620	1,183	600	460	865	525	455
Total—Department of Defense	73,436	75,219	82,414	72,992	73,355	79,576	68,331	74,219	77,113

Notes:

(1) FY 1968 TOA and NOA amounts include proposed ssupplemental appropriations to finance recently enacted legislation: $600 million for military pay increase; $196 million for civilian pay increase; and $4 million for postal rate increase. Also included are adjustments for inter-appropriation transfers of $1,695,600,000 as contained in the budget revision shown in the President's FY 1969 Budget.

(2) FY 1969 TOA and NOA amounts include $75 million proposed legislation.

[a] Amounts include the applicable portion of "Receipts and Funds Transactions" itemized separately in the functional classification section above.

Table No. 5

Department of Defense

DIRECT BUDGET PLAN (TOA), NEW OBLIGATIONAL AUTHORITY (NOA), AND EXPENDITURES

Fiscal Years 1967–1969 by Functional Classification and Department or Agency

(Millions of Dollars)

	Dept. of Defense—Total			Dept. of the Army			Dept. of the Navy			Dept of the Air Force			Def. Agencies/ OSD/Civil Def.		
	FY 1967	FY 1968	FY 1969	FY 1967	FY 1968	FY 1969	FY 1967	FY 1968	FY 1969	FY 1967	FY 1968	FY 1969	FY 1967	FY 1968	FY 1969
Total Obligational Authority (TOA):															
Military Personnel															
Active Forces	17,318	19,192	19,809	6,733	7,876	8,136	5,175	5,590	5,820	5,410	5,727	5,830	—	—	—
Reserve Forces	918	935	953	620	613	625	150	159	156	148	163	172	—	—	—
Retired Pay	1,831	2,072	2,275	—	—	—	—	—	—	—	—	—	1,831	2,072	2,275
Total—Military Personnel	20,067	22,199	23,037	7,353	8,489	8,761	5,324	5,749	5,976	5,558	5,889	6,002	1,831	2,072	2,275
Operation and Maintenance	19,361	20,548	22,839	7,520	8,188	8,472	5,045	5,324	6,140	5,853	6,010	7,044	943	1,026	1,131
Subtotal—Operations	39,428	42,747	45,876	14,874	16,676	17,233	10,370	11,073	12,116	11,411	11,900	13,046	2,774	3,098	3,406
Procurement															
Aircraft	10,315	8,972	8,995	1,195	899	735	3,521	2,547	2,898	5,599	5,526	5,362	—	—	—
Missiles	2,039	2,478	3,642	383	494	956	373	605	893	1,283	1,380	1,793	—	—	—
Ships	2,176	1,341	1,812	—	—	—	2,176	1,341	1,812	—	—	—	—	—	—
Tracked Combat Vehicles	528	326	310	509	323	299	19	3	11	—	—	—	—	—	—
Ordnance, Vehicles & Rel. Equip.	5,271	6,079	7,112	2,010	2,732	3,091	1,514	1,765	1,930	1,745	1,581	2,090	1	1	1
Electronics & Communications	1,517	1,366	1,676	590	568	731	503	484	596	419	307	340	5	7	9
Other Procurement	2,265	1,816	2,268	848	502	563	811	804	1,153	566	465	465	40	44	87
Total—Procurement	24,110	22,378	25,816	5,535	5,518	6,376	8,918	7,548	9,293	9,612	9,259	10,050	46	53	97
Research, Dev., Test, & Eval. (RDT&E)															
Military Sciences	618	563	659	158	154	172	193	187	205	159	143	163	107	80	120
Aircraft	1,199	1,230	1,024	116	133	100	328	264	337	744	823	572	12	10	15
Missiles	2,456	2,492	2,543	716	659	773	743	784	729	884	938	939	114	111	103
Military Astronautics	961	1,064	1,299	16	8	11	19	16	23	922	1,037	1,262	4	3	3
Ships and Small Craft	288	317	418	1	*	1	287	316	418	—	—	—	—	—	—
Ordnance, Vehicles & Rel. Equip	357	331	340	192	167	176	165	164	165	—	—	—	—	—	—
Other Equipment	985	956	1,109	312	314	339	116	128	127	310	270	393	246	244	250
Programwide Management & Support	425	437	512	80	79	90	96	96	143	240	250	267	9	11	12
Emergency Fund	—	24	125	—	—	—	—	—	—	—	—	—	—	24	125
Total—RDT&E	7,289	7,415	8,031	1,591	1,514	1,662	1,947	1,956	2,146	3,259	3,462	3,595	491	483	628
Military Construction	1,160	1,505	1,440	438	421	704	287	533	372	426	431	279	9	120	85
Other	544	690	631	—	—	—	—	—	—	—	—	—	544	690	631
Subtotal—Military Functions	72,532	74,735	81,794	22,438	24,129	25,974	21,522	21,110	23,928	24,708	25,052	26,969	3,864	4,444	4,847
Military Assistance	904	484	620	—	—	—	—	—	—	—	—	—	—	—	—
Total—TOA	73,436	75,219	82,414	22,438	24,129	25,974	21,522	21,110	23,928	24,708	25,052	26,969	3,864	4,444	4,847
Plus NOA for Working Capital Accts	535	118	—	351	—	—	77	—	—	—	—	—	107	118	—
Other financing adjustments	−1,247	−2,025	−2,617	150	−564	−760	−888	−856	−905	−485	−591	−932	100	69	60
Receipts and Funds Transactions	268	43	−221	−63	−63	−65	−41	−41	−43	−30	−52	−35	—	—	—
New Obligational Authority	72,992	73,355	79,576	22,876	23,502	25,150	20,669	20,212	22,981	24,193	24,410	26,003	4,071	4,632	4,907
Expenditures	68,331	74,219	77,113	20,961	23,988	24,869	19,246	20,801	22,014	22,918	24,582	25,447	4,431	4,323	4,258

Notes:

(1) FY 1968 TOA and NOA amounts include proposed supplemental appropriations to finance recently enacted legislation: $600 million for military pay increase; $196 million for civilian pay increase; and $4 million for postal rate increase. Also included are adjustments for inter-appropriation transfers of $1,695,600,000 as contained in the budget revision shown in the President's FY 1969 Budget.

(2) FY 1969 TOA and NOA amounts include $75 million for proposed legislation not distributed by Department or Agency.

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Table No. 6

Department of Defense

ESTIMATED OBLIGATIONS AND AMOUNTS AVAILABLE FOR OBLIGATION

Fiscal Years 1967–1969

(Millions of Dollars)

Item	New obligational authority	Reimbursements	Total available for obligation	Obligations	Unobligated balance carried forward	Unobligated carryover as % of available
Fiscal Year 1967—Actual						
Department of the Army	22,876	3,183	28,028	24,947	2,965	10.6
Department of the Navy	20,669	1,462	28,783	21,961	6,762	23.5
Department of the Air Force	24,193	1,447	30,161	26,531	3,614	12.0
Defense Agencies/OSD	3,970	73	4,315	3,845	362	8.4
Civil Defense	101	—	141	118	22	15.6
Subtotal—Military Functions	71,809	6,165	91,428	77,402	13,725	15.0
Military Assistance	1,183	8	741	729	12	1.6
Total	72,992	6,174	92,169	78,132	13,737	14.9
Fiscal Year 1968—Estimated						
Department of the Army	23,502	3,175	29,759	27,137	2,622	8.8
Department of the Navy	20,212	1,405	28,450	23,286	5,164	18.2
Department of the Air Force	24,410	1,306	29,419	26,352	3,066	10.4
Defense Agencies/OSD	4,545	73	4,855	4,338	438	9.0
Civil Defense	86	—	109	106	3	2.8
Subtotal—Military Functions	72,755	5,959	92,592	81,219	11,294	12.2
Military Assistance	600	8	400	390	10	2.5
Total	73,355	5,967	92,992	81,608	11,304	12.2
Fiscal Year 1969—Estimated						
Department of the Army	25,150	3,269	31,555	28,848	2,707	8.6
Department of the Navy	22,981	1,434	30,071	25,351	4,720	15.7
Department of the Air Force	26,003	1,014	30,718	27,436	3,282	10.7
Defense Agencies/OSD	4,830	83	5,351	4,882	387	7.2
Civil Defense	77	—	80	80	—	—
Proposed legislation	75	—	75	75	—	—
Subtotal—Military Functions	79,116	5,799	97,850	86,672	11,095	11.3
Military Assistance	460	8	558	548	10	1.8
Total	79,576	5,807	98,408	87,220	11,105	11.3

Notes:

(1) The total available for obligation is the sum of (a) unobligated balances brought forward, (b) new obligational authority, (c) unobligated balances transferred, and (d) reimbursements, for general fund accounts.

(2) The unobligated balance carried forward is the total available for obligation less (a) obligations and (b) amounts withdrawn.

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ESTIMATED EXPENDITURES AND AMOUNTS AVAILABLE FOR EXPENDITURE
Fiscal Years 1967–1969
(Millions of Dollars)

Item	New obligational authority	Total available for expenditure	Expenditures	Unexpended balance carried forward	Unexpended carryover as percent of available
Fiscal Year 1967—Actual					
Department of the Army	22,876	31,920	20,961	10,826	33.9
Department of the Navy	20,669	38,826	19,246	19,507	50.2
Department of the Air Force	24,193	36,541	22,918	13,607	37.2
Defense Agencies/OSD	3,970	5,536	4,241	1,180	21.3
Civil Defense	101	220	100	115	52.3
Military Assistance	1,183	5,742	865	5,878	85.0
Total	72,992	118,785	68,331	50,111	42.2
Fiscal Year 1968—Estimated					
Department of the Army	23,502	34,529	23,988	10,572	30.6
Department of the Navy	20,212	39,779	20,801	18,976	47.7
Department of the Air Force	24,410	38,023	24,582	13,443	35.4
Defense Agencies/OSD	4,545	5,720	4,230	1,410	24.7
Civil Defense	86	201	93	108	53.7
Military Assistance	600	4,815	525	4,290	89.1
Total	73,355	123,066	74,219	48,798	39.7
Fiscal Year 1969—Estimated					
Department of the Army	25,150	35,872	24,869	11,003	30.7
Department of the Navy	22,981	42,032	22,014	20,018	47.6
Department of the Air Force	26,003	39,520	25,447	14,074	35.6
Defense Agencies/OSD	4,830	5,940	4,169	1,688	28.4
Civil Defense	77	185	89	96	51.9
Proposed legislation	75	75	70	5	6.7
Military Assistance	460	4,750	455	4,295	90.4
Total	79,576	128,374	77,113	51,179	39.9

Notes:

(1) The total available for expenditure is the sum of (a) unexpected balances brought forward (b) new obligational authority and (c) transfers between appropriations.

(2) The unexpected balance carried forward is the total available for expenditure less (a) expenditures and (b) writeoffs/restorations.

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Table No. 8

Department of Defense

ORDER OF MAGNITUDE DATA ON COMPARATIVE EXPENDITURES BY FUNCTIONAL TITLE

Selected Fiscal Years 1955–1969

(Millions of Dollars)

	FY 1955	FY 1957	FY 1959	FY 1961	FY 1963	FY 1965	FY 1966	FY 1967	FY 1968	FY 1969
Functional classification										
Military Personnel										
Active Forces	10,643	10,384	10,545	10,651	11,386	12,662	14,407	17,054	18,850	19,623
Reserve Forces	341	514	615	648	599	725	755	902	890	905
Retired Pay	419	511	641	786	1,015	1,384	1,591	1,830	2,060	2,265
Total	11,403	11,409	11,801	12,085	13,000	14,771	16,753	19,787	21,800	22,793
Operation and Maintenance	7,931	9,487	10,378	10,611	11,874	12,349	14,710	19,000	19,800	22,260
Subtotal—Operations	19,334	20,896	22,179	22,696	24,874	27,120	31,463	38,787	41,600	45,053
Procurement										
Aircraft	8,804	8,647	7,730	5,898	6,309	5,200	6,635	8,411	9,368	8,935
Missiles	604	1,855	3,337	2,972	3,817	2,096	2,069	1,930	2,124	2,670
Ships	944	842	1,491	1,801	2,522	1,713	1,479	1,398	1,170	1,651
Tracked Combat Vehicles	[a]	[a]	[a]	[a]	[a]	236	202	274	494	380
Ordnance, Vehicles and Related Equipment	1,191	674	399	675	1,665	1,073	1,697	3,978	5,045	6,380
Electronics and Communications	441	704	720	1,042	1,427	897	983	1,284	1,380	1,392
Other Procurement	854	767	730	706	891	625	1,273	1,737	1,888	2,036
Total	12,838	13,488	14,409	13,095	16,632	11,839	14,339	19,012	21,470	23,445
Research, Development, Test and Evaluation	2,261	2,406	2,866	6,131	6,376	6,236	6,259	7,160	7,200	7,800
Military Construction	1,715	1,968	1,948	1,605	1,144	1,007	1,334	1,536	1,565	1,450
Family Housing	—	—	—	—	427	619	647	482	520	570
Civil Defense	*	−1	*	*	203	93	86	100	93	89
Special Foreign Currency Program	—	—	—	—	—	—	—	—	2	6
Working Capital Accounts	−611	−323	−179	−300	−1,401	−741	281	512	1,400	−1,614
Military Assistance	2,292	2,352	2,340	1,449	1,721	1,229	968	873	550	525
Receipts and Funds Transactions	[b]	[b]	[b]	[b]	[b]	[b]	[b]	−130	−180	−211
Total—Department of Defense	37,823	40,788	43,563	44,676	49,973	47,401	55,377	68,331	74,219	77,113
Department or Agency										
Department of the Army	8,901	9,063	9,467	10,130	11,499	11,600	14,832	20,961	23,988	24,869
Department of the Navy	9,732	10,397	11,720	12,214	14,005	13,399	16,026	19,246	20,801	22,014
Department of the Air Force	16,405	18,361	19,083	19,785	20,642	18,216	20,131	22,918	24,582	25,447
Defense Agencies/OSD	494	615	953	1,098	1,905	2,865	3,335	4,241	4,230	4,169
Civil Defense	*	−1	*	*	203	93	86	100	93	89
Military Assistance [c]	2,292	2,352	2,340	1,449	1,721	1,229	968	865	525	455
Total—Department of Defense	37,823	40,788	43,563	44,676	49,973	47,401	55,377	68,331	74,219	[d] 77,113

* Less than $500,000.

[a] Amount included in entry for "Ordnance, Vehicles, and Related Equipment."

[b] Data for receipts and funds transactions (applied to expenditures in the FY 1969 Budget presentation) have not yet been compiled and reflected in totals for FY 1966 and prior years.

[c] Amounts shown for FY 1967–1969 include the applicable portion of "Receipts and Funds Transactions" itemized separately in the functional classification section above.

[d] Includes $70 million for proposed legislation not distributed by the Department or Agency.

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Table No. 9

Department of Defense

ORDER OF MAGNITUDE DATA ON COMPARATIVE NEW OBLIGATIONAL AUTHORITY BY FUNCTIONAL TITLE

Selected Fiscal Years 1955–1969

(Millions of Dollars)

	FY 1955	FY 1957	FY 1959	FY 1961	FY 1963	FY 1965	FY 1966	FY 1967	FY 1968	FY 1969
Functional classification										
Military Personnel										
Active Forces	10,650	10,411	10,709	10,695	11,431	12,699	14,655	17,426	19,192	19,809
Reserve Forces	369	613	644	660	672	751	818	951	935	953
Retired Pay	424	515	640	790	1,026	1,399	1,600	1,839	2,072	2,275
Total	11,442	11,539	11,993	12,144	13,129	14,849	17,073	20,216	22,199	23,037
Operation and Maintenance	8,276	9,734	10,187	10,702	11,496	12,603	15,339	19,434	20,548	22,839
Subtotal—Operations	19,718	21,273	22,180	22,846	24,625	27,452	32,412	39,650	42,747	45,876
Procurement										
Aircraft	4,922	6,559	6,167	4,998	5,882	5,962	9,354	9,579	8,533	8,730
Missiles	234	2,135	3,966	2,078	3,969	2,615	1,642	2,207	2,634	3,617
Ships	1,150	1,335	1,943	2,246	2,939	1,905	1,522	1,757	1,066	1,712
Tracked Combat Vehicles	[a]	[a]	[a]	[a]	[a]	211	435	517	353	310
Ordnance, Vehicles and Related Equipment	527	247	545	1,034	1,959	1,431	4,252	5,302	5,296	6,636
Electronics and Communications	327	469	982	935	1,176	1,039	1,240	1,385	1,195	1,575
Other Procurement	260	549	701	425	742	672	1,568	2,125	1,637	2,174
Total	7,420	11,294	14,304	11,716	16,667	13,836	20,013	22,871	20,716	24,754
Research, Development, Test and Evaluation	1,708	2,185	3,777	6,033	6,993	6,483	6,746	7,172	7,148	8,006
Military Construction	882	1,915	1,385	1,061	1,204	1,049	2,566	1,098	1,405	1,430
Family Housing	—	—	—	—	590	631	666	507	691	602
Civil Defense	—	—	—	—	126	105	107	102	86	77
Special Foreign Currency Program	—	—	—	—	—	—	—	7	—	13
Working Capital Accounts	1,119	75	57	30	—	—	—	535	118	—
Transfers from prior year balances[b]	—60	—487	—535	—366	—410	—193	—	—1	—	—1,500
Military Assistance	1,204	2,018	1,515	1,785	1,325	1,130	1,023	782	400	540
Receipts and Funds Transactions	[c]	[c]	[c]	[c]	[c]	[c]	[c]	268	43	—221
Total—Department of Defense	31,991	38,273	42,683	43,106	51,119	50,493	63,533	72,992	73,355	79,576
Department or Agency										
Department of the Army	7,764	7,762	9,381	9,914	11,631	12,003	17,492	22,876	23,502	25,150
Department of the Navy	10,221	10,220	11,820	12,431	15,286	14,845	18,486	20,669	20,212	22,981
Department of the Air Force	12,137	17,697	18,713	17,884	20,179	19,219	22,655	24,193	24,410	26,003
Defense Agencies/OSD	666	666	1,255	1,092	2,572	3,192	3,770	3,970	4,545	4,830
Civil Defense	—	—	—	—	126	105	107	101	86	77
Military Assistance[d]	1,204	2,018	1,515	1,785	1,135	1,130	1,023	1,183	600	460
Total—Department of Defense	31,991	38,273	42,683	43,106	51,119	50,493	63,533	72,992	73,355	[e] 79,576

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[a] Amount included in entry for "Ordnance, Vehicles, and Related Equipment."

[b] Amounts by functional classification above include transfers from prior year balances to reflect total new obilgational availability, with this one line deduction to net to NOA.

[c] Data for receipts and funds transactions (netted against NOA in the FY 1969 Budget presentation) have not yet been compiled and reflected in totals for FY 1966 and prior years.

[d] Amounts shown for FY 1967–1969 include the applicable portion of "Receipts and Funds Transactions" itemized separately in the functional classification section above.

[e] Includes $75 million for proposed legislation not distributed by Department or Agency.

Table No. 10

Department of Defense

MAJOR PROCUREMENT ITEM QUANTITIES—FY 1968 and 1969 PROGRAMS

	FY 1968 Revised Program	FY 1969 Program
Aircraft		
Army	1,168	1,304
Navy and Marine Corps	521	720
Air Force	1,078	919
Total—Aircraft		
Helicopters	1,305	1,626
Other Aircraft	1,462	1,317
Total—All Services	2,767	2,943
Missiles		
Army	14,900	29,807
Navy and Marine Corps	8,972	6,656
Air Force	4,093	6,523
Total—Missiles	27,965	42,986
Ships—Navy		
New Construction	30	25
Conversions	19	43
Total—Ships	49	68
Tracked Combat Vehicles		
Army	3,584	3,156

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Table No. 11

Department of Defense

MILITARY AND CIVILIAN PERSONNEL—Yearend Number

	FY 1966 actual	FY 1967 actual	FY 1968 estimate	FY 1969 estimate
Military Personnel				
Army				
Officers	117,648	143,425	164,136	171,171
Enlisted	1,079,687	1,296,619	1,368,394	1,333,873
Military Academy cadets	2,316	2,378	3,096	3,350
Total—Army	1,199,651	1,442,422	1,535,626	1,508,394
Navy				
Officers	79,580	81,677	85,597	90,730
Enlisted	660,518	665,226	678,360	699,577
Naval Academy midshipmen	4,331	4,399	4,243	4,243
Aviation cadets	551	92	—	—
Total—Navy	744,980	751,394	768,200	794,550
Marine Corps				
Officers	20,512	23,592	25,236	26,187
Enlisted	240,911	261,584	276,686	280,248
Aviation cadets	293	93	—	—
Total—Marine Corps	261,716	285,269	301,922	306,435
Air Force				
Officers	130,724	135,417	137,128	133,977
Enlisted	753,477	758,648	743,425	730,290
Air Force Academy cadets	3,152	3,361	3,575	3,874
Total—Air Force	887,353	897,426	884,128	868,141
Department of Defense—Total				
Officers	348,464	384,111	412,097	422,065
Enlisted	2,734,593	2,982,077	3,066,865	3,043,988
Academy cadets and midshipmen	9,799	10,138	10,914	11,467
Aviation cadets	844	185	—	—
Total—Defense	3,093,700	3,376,511	3,489,876	3,477,520
Civilian Personnel				
Army	371,121	436,830	439,681	443,654
Navy	356,744	402,513	417,714	413,202
Air Force	306,911	323,316	316,856	318,906
Defense Agencies/OSD	68,923	75,342	73,855	75,368
Total—Defense	1,103,699	1,238,001	1,248,106	1,251,130

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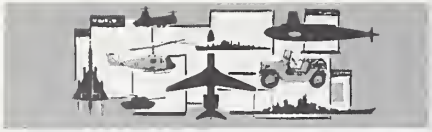

DEFENSE PROCUREMENT

Contracts of $1,000,000 and over awarded during the month of January 1968:

DEFENSE SUPPLY AGENCY

2—**Burlington Industries**, New York, N.Y. $4,947,750. 4,500,000 linear yards of wind resistant cotton poplin cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1236.

—**J. P. Stevens & Co.**, New York, N.Y. $2,964,653. 2,500,000. linear yards of wind resistant cotton poplin cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1234.

—**C.M. London Co.**, New York, N.Y. $1,844,730. 1,786,317 linear yards of wind resistant cotton poplin cloth. Defense Personnel Support Center, Philadelphia, Pa.

—**Damascus Hosiery Mills**, Damascus, Va. $1,605,460. 2,500,000 pairs of men's socks. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1224.

4—**Consolibag, Inc.**, Philadelphia, Pa. $1,398,900. 7,500,000 osnaburg sandbags. Defense General Supply Center, Philadelphia, Pa. DSA–400–68–C–3109–P002.

9—**Cherubino Petti & Co.**, Atlantic City, N.J. $1,436,500. 75,000 men's tropical wool polyester coats. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1293.

—**Marcie Dale, Inc.**, Atlantic City, N.J. $1,785,073. 100,000 men's tropical wool polyester coats. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1295.

—**DeRossi & Son Co.**, Vineland, N.J. $1,153-947. 58,410 men's tropical wool polyester coats. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1294.

11—**Gentex Corp.**, Carbondale, Pa. $1,086,840. 15,116 crash-type flying helmets. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1304.

15—**Otis Elevator Co.**, Cleveland, Ohio. $1,559,528. Fork lift trucks. Defense General Supply Center, Richmond, Va. DSA–400–68–C–3692.

16—**Prestex, Inc.**, New York, N.Y. $7,011,529. 5,640,000 innear yards of wind -resistant cotton poplin cloth (rip stop type) and 600,000 linear yards of wind-resistant cotton poplin cloth (combed). Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1358.

—**Standard Oil Co. of Calif.**, San Francisco, Calif. $3,170,815. Fuel oil and gasoline. Defense Fuel Supply Center, Alexandria, Va. DSA–600–68–C–1177.

17—**Cavalier Bag Co.**, Lumberton, N.C. $2,924,450. 16,000,000 osnaburg sandbags. Defense General Supply Center, Richmond, Va. DSA 400–68–C–3108–P002.

—**Dowling Bag Co.**, Valdosta, Ga. $2,050,000. 12,000,000 osnaburg sandbags. Defense General Supply Center Richmond, Va. DSA 400–68–C–3171–P001.

18—**Saddler Textiles**, New York, N.Y. $2,043,014. 1,940,000 yards of wind-resistant cotton poplin cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1379.

—**Putnam Mills**, New York, N.Y. $1,514,250. 1,500,000 yards of wind-resistant cotton poplin cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1378.

—**Franklin Clothes**, Woodbine, N.J. $1,182,601. 60,000 men's polyester tropical wool coats. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1375.

CONTRACT LEGEND

Contract information is listed in the following sequence: Date—Company — Value — Material or Work to be Performed—Location of Work Performed (if other than company plant) — Contracting agency—Contract number.

—**ReRossi & Sons**, Vineland, N.J. $1,166,447. 58,410 men's polyester tropical wool coats, Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1294.

—**M-R-S- Mfg. Co.**, Flora, Miss. $1,921,998. Thirty wheeled construction tractors with scrapers. Defense Construction Supply Center, Columbus, Ohio. DSA–700–68–C–8669.

—**Sparling Mills**, Greenville, R.I. $3,567,400. 20,000,000 polypropylene sandbags. Defense General Supply Center, Richmond Va. DSA–400–67–C–7094–POO7.

22—**Baker York, Inc.**, West Memphis, Ark. $1,163,987. 166 fork lift trucks with repair parts. Defense General Supply Center, Richmond, Va. DSA–400–68–C–3880.

—**Tanenbaum Textile Co.**, New York, N.Y. $2,054,250. 2,000,000 yards of wind-resistant poplin cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1395.

23—**U.S. Steel International**, Washington, D.C. $2,551,717. 43,279,714 lbs. of structural steel shapes. Defense Industrial Supply Center, Philadelphia, Pa. DSA-500–68–C–8612.

24—**Van Brode Milling Co.**, Clinton, Mass. $4,841,964. 150,840 cases of ration supplement sundries pack. Defense Personnel Support Center, Philadelphia, Pa. DSA–134–8–C–175A1.

—**Union Oil Co. of Calif.**, Los Angeles, Calif. $1,122,750. 225,000 barrels of diesel fuel oil. Defense Fuel Supply Center, Alexandria, Va. DSA–600–68–D–0823–POO1.

25—**B.G. Colton Co.**, New York, N.Y. $3,060,525. 3,160,000 yards of wind-resistant cotton poplin cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1429.

31—**J. P. Stevens & Co.**, New York. N.Y. $4,610,001. 3,906,000 yards of wind-resistant sateen cotton and nylon cloth. Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1473.

—**Glenn Mfg. Co.**, Amory, Miss. $1,140,022. 500,010 pairs of men's wind-resistant cotton trousers (rip stop). Defense Personnel Support Center, Philadelphia, Pa. DSA–100–68–C–1467.

—**Winfield Mfg. Co.**, Winfield, Ala. $1,085,021. 500,010 pairs of men's wind-resistant cotton trousers (rip stop). Defense Personnel Support Center, Philadelphia, Pa. DSA 100–68–C–1466.

DEPARTMENT OF THE ARMY

2—**Garrett Corp.**, Belmar, N.J. $5,635,500. 255 inflatable shelters for medical units. Farmingdale, N.Y. Mobility Equipment Command, St. Louis, Mo. DA–AK01–68–C–4237.

—**Chamberlain Mfg. Co.**, New Bedford, Mass. $5,462,500. Metal parts for 155mm projectiles. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0286.

—**Continental Motors**, Mobile, Ala. $1,730,661. Engine assemblies for M60 tanks. Tank Automotive Command, Warren, Mich. DA–AEO7–68–C–1166.

—**General Motors**, Detroit, Mich. $1,300,000. Joint design team effort and support for the main battle tank. Cleveland, Ohio, and Warren, Mich. Tank Automotive Command, Warren, Mich. DA–20–113–AMC–08843–(T).

—**General Electric**, Syracuse, N.Y. $4,642,405. Radar sets. Electronics Command, Philadelphia, Pa. DA–AB05–67–C–2341.

3—**General Motors**, Detroit, Mich. $1,000,000. Engineering design test for the main battle tank. Milwaukee, Wis. and Cleveland, Ohio. Tank Automotive Command, Warren, Mich. DA–20–113–AMC–8843–(T).

—**Bell Aerospace Corp.**, Fort Worth, Tex. $1,199,082. Nonpersonal services and supplies for a product improvement program for the UH–1 and AH–1 series helicopters. Hurst, Tex. DA–AJ01–68–C–1368; $2,250,040. Repair of UH–1 helicopters. Hurst, Tex. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–68–D–0056.

—**Kemmons-Wilson, Inc.**, and **South and Patton**, Memphis, Tenn. $9,031,122. Construction of 360 family housing units, with all supporting utilities, in the Canal Zone. Engineer Dist., Jacksonville, Fla. DA–CA17–68–C–0027.

4—**Raytheon Co.**, Norwood, Mass. $2,156,584. Multiplexers and spare parts kits. North Dighton, Mass. Electronics Command, Philadelphia, Pa. DA–AB05–68–C–0609.

—**Texas Instruments**, Attleboro, Mass. $1,026,791. Bullet jacket cups for 7.62mm tracers. Frankford Arsenal, Philadelphia, Pa. DA–AA25–68–C–0350.

—**Emerson Electric**, St. Louis, Mo. $10,193,000. Aircraft armament sub-systems, test sets and test stands for XM28 and TAT102A sub-systems. Army Weapons Command, Rock Island, Ill. DA–AF03–68–C–0025.

5—**Zero Mfg. Co.**, Los Angeles, Calif. $4,598,620. Expandable shelters. Burbank, Calif. Mobility Equipment Command, St. Louis, Mo. DA–AK01–68–C–4236.

—**General Motors**, Indianapolis, Ind. $2,589,674. T–63–A–5A engines for OH–6A helicopters. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–68–C–1333.

—**Chaney & James Construction Co.**, Richardson, Tex. $2,723,484. A 300–man BOQ with mess at Fort Hood, Tex. Engineer Dist., Fort Worth, Tex.

8—**Lockheed Aircraft**, Van Nuys, Calif. $21,400,000. AH–56A Cheyenne helicopters and funding for long lead time items. Aviation Materiel Command, St. Louis, Mo. DA–23–201–AMC–03667.

10—**Thiokol Chemical Corp.**, Brunswick, Ga. $3,530,400. Loading, assembling and packing of bombs. Army Arsenal, Edgewood, Md. DA–AA–15–68–C–0341.

—**Neatco Products**, Pottstown, Pa. $1,291,810. Components for artillery proximity fuzes. Harry Diamond Laboratories, Washington, D.C. DA–AG–39–68–C–0038.

—**Hughes Aircraft**, Culver City, Calif. $2,000,000. Iroquois Night Fighter and Night Tracker (INFANT) System. Electronics Command, Fort Monmouth, N.J. DA–AB07–68–C–0188.

11—**ACF Industries**, St. Louis, Mo. $1,916,544. Metal parts for point detonating fuzes for 8lmm cartridges. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0291.

—**Goodyear Tire & Rubber Co.**, Akron, Ohio. $5,024,956. Track shoe assemblies for use on M48 tanks. St. Mary's, Ohio. Tank Automotive Command, Warren, Mich. DA–AE07–68–C–1216.

12—**Hamilton Watch** Co., Lancaster, Pa. $3,661,823. Safety and arming devices for artillery fuzes. Harry Diamond Laboratories, Washington, D.C. DA–AG39–68–C–0039.

—**Philco-Ford Corp.**, Philadelphia, Pa. $2,483,562. Spares for the Integrated Wide Band Communications Systems. Electronics Command, Fort Monmouth, N.J. DA–28–043–AMC–01694.

—**General Motors**, Cleveland, Ohio. $2,386,476. 155mm howitzers. Army Weapons Command, Rock Island, Ill. DA–11–199–AMC–00610.

—**Grand Machining Co.**, Detroit, Mich. $2,029,800. 81mm mortar fin assemblies. Vero Beach, Fla. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0039.

—**Litton Systems, Inc.**, New Rochelle, N.Y. $1,213,401. Complete self contained communications facility. Farmingdale, N.Y. Electronics Command, Philadelphia, Pa. DA–AB05–68–C–0010.

13—**General Motors**, Detroit, Mich. $2,644,232. Repair and replacement of government plant equipment, utilities and rental of a parking area at the Army Ammunition Plant, St. Louis, Mo. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–67–C–0025.

15—**National Presto Industries**, Eau Claire, Wis. $26,021,327. 105mm projectile parts. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0065.

—**DeLong Corp.**, New York, N.Y. $3,779,000. Piers in Southeast Asia. Mobility Equipment Command, St. Louis, Mo. DA–23–195–AMC–00391.

—**Wagner Electric Corp.**, St. Louis, Mo. $2,912,760. Metal parts for 4.2-inch projectiles. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0234.

—**Lockheed Aircraft**, Sunnyvale, Calif. $1,600,000. Design and development of the military version of the six-wheel articulated vehicle. Tank Automotive Command, Warren, Mich. DA–AE07–68–C–1242.

—**Western Electric**, New York, N.Y. $2,-512,270. Hard site defense studies. Redstone Arsenal, Ala. Whippany, N.J. DA–38–069–AMC–00333.

16—**Raytheon Co.**, Bedford, Mass. $11,561,-095. Advanced development of the SAM–D missile system. Army Missile Command, Huntsville, Ala. DA–AH01–67–C–1995.

—**Chamberlain Mfg. Corp..** Elmhurst, Ill. $3,430,756. Metal parts for 8lmm mortars. Burlington, N.J. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–11–173–AMC–00803.

—**Chamberlain Mfg. Corp.**, Elmhurst, Ill. $2,803,878. 105mm cartridge cases. Burlington, N.J. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–67–C–0082.

—**Nu-Pak Co.**, Parkesburg, Pa. $1,378,837. Rotor blade shipping and storage containers for the Iroquois helicopter. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–68–C–1338.

—**AVCO Corp.**, Stratford, Conn. $1,106,-257. Ground support equipment and special tools in support of T55–L–11 turbine engines for Chinook helicopters. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–67–C–2292.

17—**Teletype Corp.**, Skokie, Ill. $2,500,-000. Classified electronic equipment. Electronics Command, Fort Monmouth, N.J.

—**Texas Instruments**, Dallas, Tex. $9,000,-000. Classified electronics equipment. $1,000,000. Classified electronics equipment. Electronics Command, Fort Monmouth, N.J.

—**Polan Industries**, Huntington, W, Va. $1,046,719. Infrared optical periscopes and spare heads. Frankford Arsenal, Philadelpha, Pa. DA–AA25–68–C–0381.

—**Philco-Ford Corp.**, Newport Beach, Calif. $1,500,000. FY 1968 research and development on the Chaparral missile system. Anaheim, Calif. DA–AH01–68–C–0752.

18—**Aluminum Co. of America**, Pittsburgh, Pa. $3,616,499. Motor tubes for 2.75-inch rockets. New Kensington, Pa. Picatinny Arsenal, Dover, N.J. DA–AA21–67–C–0416.

—**Norris Industries**, Los Angeles, Calif. $9,955,813. 8lmm projectiles and 105mm cartridge cases. Modesto, Calif. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0304.

—**Southwest Truck Body Co.**, St. Louis, Mo. $1,214,488. Semi-trailer mounted electronic repair shop equipment. Mobility Equipment Command, St. Louis, Mo. DA–AK01–68–C–2298.

—**Northrop Corp.**, **Anaheim**, Calif. $3,877,-495. 106mm projectiles. Picatinny Arsenal, Dover, N.J. DA–AA21–68–C–0516.

19—**General Motors**, Detroit, Mich. $8,091-166. Cargo pick-up trucks. Baltimore Md.; St. Louis, Mo.; Freemont, Calif. and Atlanta, Ga. Tank Automotive Command, Warren, Mich. DA–AB07–68–C–1247.

—**Sylvania Electric Products**, Williamsville, N.Y. $1,772,862. AN/ARC–115 and 116 radio sets, direction finders AN/ARN 89 and C–6533/ARC controlled communication sets. Electronics Command, Philadelphia, Pa. DA–28–043–AMC–01943.

—**Ford Motors**, Dearborn, Mich. $8,000,000. Five-ton trucks. General Purpose Vehicle Project Manager, Warren, Mich. DA–AE06–68–C–0003.

22—**LTV Electrosystems**, Huntington, Ind. $2,271,120. AN/PRC–25 radio sets. Electronics Command, Philadephia, Pa. DA–AB05–68–C–0005.

—**Varo, Inc.**, Garland, Tex. $1,242,700. Search lights. Elecatronics Command, Fort Monmouth, N.J. DA–AB07–68–C–0055.

23—**Chrysler Motors**, Detroit, Mich. $5,072,-735. Various trucks. Warren, Mich. Tank Automotive Command, Warren, Mich. DA–AE07–68–C–1245.

—**Chicago, Rock Island & Pacific Railroad Co.**, Chicago, Ill. $3,343,000. Alteration of the company bridge across the Arkansas River at Little Rock, Ark., to include an appropriate moveable span with appurtenances for the passage of navigation. Engineer Dist., Little Rock Ark. DA–CW03–68–C–0003.

—**General Electric**, West Lynn, Mass. $2,-600,000. AH56A helicopters. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–68–C–1530.

—**Bell Aerospace Corp.**, Fort Worth, Tex. $1,249,750. UH–1 helicopter main rotor hub assemblies. Hurst, Tex. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–68–A–0022.

—**W. L. Haley & Co.**, Nashville, Tenn. $1,096,240. Excavation of the Penstock Tunnel for Carters Dam, Ga. Engineer Dist., Mobile, Ala. DA–CW01–C–0044.

24—**Remington Arms Co.**, Bridgeport, Conn. $28,229,878. Miscellaneous small arms ammunition. Independence, Mo. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–49–010–AMC–00003.

—**Columbus Milpar Mfg. Co.**, Columbus, Ohio. 2,596,000. Metal parts for 81mm cartridge fuzes. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0300.

—**American Fabricated Products**, Indianapolis, Ind. $1,130,963. Fin assemblies for 81mm mortars. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0298.

—**Page Communication Engineering, Inc.**, Washington, D.C. $6,027,923. Engineering installation, operation and maintenance, and expansion of the Integrated Wide Band Communication System at various locations in South Vietnam. Electronics Command, Fort Monmouth, N.J. DA–28–043–AMC–01693.

25—**Knoxville Acoustical Co.**, Knoxville, Tenn. $1,728,541. Replacement of a building roof at the Detroit Arsenal Tank Plant, Warren, Mich. Engineer Dist., Chicago, Ill. DA–CA23–68–C–0043.

26—**Delaware Valley Armaments**, Mount Laurel, N.Y. $4,611,600. Metal parts for artillery shell fuze boosters. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0204.

—**Cessna Aircraft**, Wichita, Kan. $3,668,-000. Bomb dispensers. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0008.

—**Bulova Watch Co.**, Providence, R.I. $3,-299,186. Head assemblies for 60mm fuzes. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0077.

—**AMETEK**, Sheboygan, Wis. $2,688,720. Support assemblies for 105mm cartridge containers. Plymouth, Wis. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0310.

—**Beech Aircraft**, Wichita, Kan. $1,668,-000. Bomb dispensers. Salina, Kan. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0009.

—**St. Louis Southwestern Railway Co.**, Tyler, Tex. $4,616,000. Alteration of Rob Roy Railroad Bridge, Pine Bluff, Ark., to incorporate a mobable span with appurtenances for passage of navigation. Engineer Dist., Little Rock, Ark. DA–CWO3–68–C–0C02.

—**Bogue Electric Mfg. Corp.**, Patterson, N.J. $4,609,017. Generator sets. Electronics Command, Fort Monmouth, N.J. DA–11–184–AMC–00864.

—**Gould National Batteries, Inc.**, St. Paul, Minn. $3,047,030. M514 fuze component. Harry Diamond Laboratories, Washington, D.C. DA–AG39–67–C–0040.

29—**Cummins Engine Co.**, Columbus, Ind. $1,-043,174. V8–300 diesel engines for 10-ton trucks. Tank Automotive Command, Warren, Mich. DA–AE07–67–C–5022.

—**Ralph M. Parsons Co.**, Los Angeles, Calif. $4,904,174. Architect engineer services for design of Sentinel anti-ballistic missile system radar and launch facilities. Engineer Div., Huntsville, Ala. DA–CA87–68–C–0001.

30—**Olin Mathieson Chemical Corp.**, East Alton, Ill. $5,771,626. Miscellaneous propellants. Baraboo, Wis. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–11–173–AMC–00106.

—**Freeto Construction Co.**, Pittsburg, Kan. $1,595,595. Relocation of two bridges and 9½ miles of road in Polk County, Mo. Engineer Dist., Kanasas City, Mo. DA–CW41–68–C–0083.

—**General Motors**, Cleveland, Ohio. $1,404,–732. 155mm self-propelled howitzers (M109). Army Weapons Command, Rock Island, Ill. DA–11–199–AMC–00610.

—**R. G. LeTourneau, Inc.**, Longview, Tex. $7,172,121. Metal parts for 750-lb. bombs. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0030.

31—**Alcan Aluminum Corp.**, Riverside, Calif. $1,629,540. Metal parts for 66mm rocket motors. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0317.

—**Chrysler Motors**, Centerline, Mich. $1,-492,678. Carryall and pick-up trucks. Warren, Mich. Tank Automotive Command, Warren, Mich. DA–AE07–68–C–1294.

—**General Time Corp.**, Stanford, Conn. $2,267,878. Mechanical time fuzes for artillery and illuminating shells, Peru, Ill. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0223.

—**Olin Mathieson Chemical Corp.**, East Alton, Ill. $2,753,069. 60mm illuminating projectiles. Marion, Ill. Ammunition Procurement & Supply Agency, Joliet, Ill. DA–AA09–68–C–0320.

—**Bermite Powder Co.**, Saugus, Calif. $3, 080,000. Loading, assembling and packing of point detonating fuzes for 20mm cartridges. Frankford Arsenal, Philadelphia, Pa. DA–AA25–68–C–0420.

—**Philco-Ford Corp.**, Philadelphia, Pa. $1, 938,680. Phase III augmentation of an integrated wide band communication system in Southeast Asia. Electronics Command, Fort Monmouth, N.J. DA–28–043–AMC–01684(E).

—**Honeywell, Inc.**, Hopkins, Minn. $1,-992,835. Nose fuzes. Procurement Agency, Chicago, Ill. DA–AA09–68–C–0202.

—**Hughes Aircraft**, Culver City, Calif. $1,-396,000. Advanced production engineering for XM26 armament subsystem TOW missile for UH–1 helicopters. Army Missile Command, Huntsville, Ala. DA–AH01–68–C–1179.

—**Martin-Marietta Corp.**, Orlanda, Fla. $1, 225,000. 81,444-man-hours for industrial engineering services in support of the Pershing weapon system. Army Missile Command, Huntsville, Ala. DA–AH01–68–C–0257.

—**AVCO Corp.**, Stratford, Conn., $2,273,000. Product support and component improvement program for T53 engines. Aviation Materiel Command, St. Louis, Mo. DA–AJ01–68–C–1546.

—**Ingersoll-Rand**, St. Louis, Mo. $1,172,-324. 264 sets of pneumatic tool outfits. Athens, Pa. Mobility Equipment Command, St. Louis, Mo. DA–AK01–68–C–5508.

—**Atlas Corp. and H. C. Smith Construction Co.**, Oakland, Calif. $14,137,000. Logistic support of the Kwajalein Test Site. Redstone Arsenal, Huntsville, Ala. DA–AG43–67–C–0001.

—**Raytheon Co.**, Andover, Mass. $9,254,000. Advanced production engineering for the improved Hawk missile system. Bedford, Mass. DA–AH01–67–C–0019; $2,241,390. Product assurance engineering for the improved Hawk missile system. DA–01–021–AMC–11390; $1,349,841. Industrial engineering services for the Hawk missile system. DA–AH01–C–0701. Army Missile Command, Huntsville, Ala.

—**Wells Marine Corp.**, El Segundo, Calif. $1,346,030. Metal parts for 20mm target practice projectiles. Frankford Arsenal, Philadelphia, Pa.

—**Harvard Industries**, Farmingdale, N.J. $1,392,066. 212 electrical equipment shelters. Electronics Command, Philadelphia, Pa. DA–AB05–68–C–1718.

DEPARTMENT OF THE NAVY

2—**McDonnell Douglas Corp.**, St. Louis, Mo. $56,300,000. To extend long lead time authorization for F–4E, RF–4C and F–4D aircraft. Naval Air Systems Command. N00019–67–C–0171.

—**Yankee-Walter Corp.**, Los Angeles, Calif. $3,485,662. 61 aircraft rescue fire-fighting trucks. Midwest Div., Naval Facilities Engineering Command, Great Lakes, Ill. N62465–68–C–0125.

—**Westinghouse Electric**, Washington, D.C. $2,447,025. Development of a Poseidon (C–3) missile launcher trainer. Sunnyvale, Calif. Special Projects Office. N00030–68–C–0142.

—**General Dynamics**, Pomona, Calif. $1,734,700. Manufacture, assemble and check-out of guidance and control airframe group, improved Tartar MK 10 Mod 1, and Ht–3a Terrier MK 8 Mod 1. Naval Ordnance Systems Command. NOw–66–0054–F Mod 3.

3—**Newport News Shipbuilding & Dry Dock Co.**, Newport News, Va. $1,099,831. Detriled plans for components, systems, and mock up for a nuclear propulsion plant. Naval Ship Systems Command. N00024–68–C–0268.

4—**Hughes Aircraft**, Fullerton, Calif. $1,178,750. Engineering services in connection with the preparation of technical manuals for the AN/SPS39 radar. Naval Supply Center Norfolk, Va. N00189–68–C–0349.

5—**LTV Aerospace Corp.**, Dallas, Tex. $5,000,000. Increase in the limitation of authorization for A–7B aircraft. Naval Air Systems Command. N00019–67–C–0082.

—**Fairchild Camera & Instrument Corp.**, Syosset, N.Y. $2,586,000. MK 83 base fuzes for 5-inch, 38-caliber projectiles. Copiague, N.Y. Navy Ships Parts Control Center, Mechanicsburg, Pa.

—**Willamette Iron & Steel Co.**, Portland, Ore. $2,137,500. Reactivation of the destroyer escort USS Riley (DE–579). Supervisor of Shipbuilding, Thirteenth Naval Dist., Seattle, Wash. N–62682–67–C–0021.

—**Stromberg Carlson Corp.**, San Diego, Calif. $1,654,200. Airborne tactical display systems for ASW aircraft. Naval Air Systems Command. N00019–67–C–0097.

—**Magnavox Co.**, Fort Wayne, Ind. $1,554,300. Classified electronic countermeasure equipment. Naval Air Systems Command. N00019–68–C–0280.

—**Hazeltine Corp.**, Little Neck, N.Y. $1,415,220. Airborne interrogator sets. Naval Air Systems Command. N00019–67–C–0656.

—**Tracor, Inc.**, Austin, Tex. $1,302,952. Chaff dispensers. Naval Air Systems Command. N00019–68–C–0279.

—**Avondale Shipyards**, Westwego, La. $1,132,264. Regular overhaul of the minesweepers USS Vigor (MSO–473) and USS Vital (MSO–474). Avondale, La. Supervisor of Shipbuilding, Eighth Naval Dist., New Orleans, La.

8—**Oshkosh Truck Co.**, Oshkosh, Wis. $1,604,496. MB–5 aircraft rescue fire-fighting trucks. Midwest Div., Naval Facilities Engineering Command, Great Lakes, Ill. N62465–68–C–0101.

—**Condec Corp.**, Old Greenwich, Conn. $5,235,324. $3,529,727. Various diesel engine generator sets. Headquarters, Marine Corp. M00027–68–C–0121. M00027–68–C–0120.

9—**United Aircraft**, East Hartford, Conn. $11,037,390. Additional funding for TF30 engines. Naval Air Systems Command. N00019–67–C–0332.

—**General Signal, Inc.**, Woodbury, N.Y. $1,740,000. Manufacture of active readout decoders. Naval Electronic Systems Command. N00024–67–C–1405.

—**Basic Construction Co.**, Newport News, Va. $1,492,100. Construction of an addition to the Polaris Training Building at the Guided Missile School, Dam Neck, Va. Atlantic Div., Naval Facilities Engineering Command, Norfolk, Va. Nby–88333.

10—**Columbia University**, New York, N.Y. $2,989,000. Complete additional research in underwater and related subjects. Office of Naval Research.

11—**Sperry Gyroscope Co.**, Great Neck, N.Y. $2,585,000. Engineering services in performing a development program on AN/SPG–55A/B radar and related equipment. Naval Ordnance Systems Command. N00017–68–C–2308.

—**Columbus Milpar & Mfg. Co.**, Columbus, Ohio. $2,087,650. Nozzle and fin assembilies for use in the loading program of the 5-inch rocket. Navy Ship Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3423.

—**Lockheed Missiles & Space Co.**, Sunnyvale, Calif. $1,802,352. Development of an improved telemetry system for the Polaris A–3 missile. Special Projects Office. N00030–68–C–0084.

—**Detyens Shipyards**, Wando, S.C. $1,265,063. Overhaul and modification work on four ocean minesweepers. Supervisor of Shipbuilding, Sixth Naval Dist. N–62673–67–C–0002.

—**Sperry Rand**, St. Paul, Minn. $1,074,863. A developmental model of a Tactical Data System Computer. Naval Ship Systems Command. N00024–68–C–1107.

12—**RCA**, Van Nuys, Calif. $1,420,000. Classified electronics equipment. Naval Ship Systems Command. N00024–68–1143.

—**Sperry Rand Corp.**, Syosset, N.Y. $1,329,000. Navigational—analog digital computer converters, supporting spare parts, technical data, and test equipment. Naval Ship Systems Command. N00024–68–C–5199/FBM.

15—**Norris Industries**, Vernon, Calif. $5,401,200. Rocket assisted projectile warhead and motor cases. Naval Ordnance Station, Indian Head, Md. N00174–68–C–0328.

16—**General Electric**, Syracuse, N.Y. $30,000,000. Sonar sets, with associated support equipment, data, and technical services. Naval Ship Systems Command. N00024–68–C–1130.

—**Sanders Associates, Inc.**, Nashua, N.H. $15,318,704. Electronic equipment. Naval Air Systems Command. NOw 66–0356.

17—**Columbus Milpar & Mfg. Co.**, Columbus, Ohio. $3,007,750. Inert parts assembly for the 5-inch spin stabilized rocket motor. Navy Ship Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3436.

—**General Electric**, Binghampton, N.Y. $1,740,490. Autopilots. Naval Air Systems Command. N00019–68–C–0306.

—**Abbott Construction Co.**, Chicago, Ill. $1,560,000. Construction of barracks at the Naval Hospital Corps School, Great Lakes, Ill. Midwest Div., Naval Facilities Engineering Command, Great Lakes, Ill.

18—**Sewart Seacraft**, Berwick, La. $1,965,566. Design, development and construction of two prototype armed troop carrier/command control boats and associated technical data and reports. Naval Ship Systems Command. N00024–68–C–0214.

19—**United Aircraft**, Windsor Locks, Conn. $2,570,814. Propeller system for P–3C aircraft. Naval Air Systems Command. N00019–68–C–0123.

—**Louis Demarkus Corp.**, Buffalo, N.Y. $1,921,378. Carbon dioxide removal plants for submarines. Naval Ship Systems Command. N00024–68–C–5216.

—**Western Electric**, New York, N.Y. $1,541,233. Sonar classification sets for shipboard use. Burlington, N.C. Naval Ship Systems Command. N00024–68–C–1103.

22—**General Electric**, New York N.Y. $7,000,000 Airborne data processing systems. Naval Air Systems Command. N00019–68–C–0245.

—**United Aircraft**, Stratford, Conn. $6,845,000. Airframe parts for CH–53A helicopters. Aviation Supply Office, Philadelphia, Pa. N00383–8–91015A–AB223.

—**Gunderson Bros. Engineering Corp.**, Portland, Ore. $4,000,000. Construction of assault support boats and minesweeper river boats. Naval Ship Systems Command. N00024–68–C–0286.

—**Clymer Machine Co.**, Trumbauersville, Pa. $1,071,000. Five-inch, 38-cal. projectile fuzes. Navy Ship Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3312.

—**Hercules, Inc.**, Wilmington, Del. $1,654,997. Nitrocellulose for use in production of cannon powder. Parlin, N.J. Naval Ordnance Station. Indian Head, Md. N00174–68–C–0341.

—**Columbia University**, New York, N.Y. $1,161,162. ASW surveillance research. Office of Naval Research.

23—**Litton Systems**, Woodland Hills, Calif. $1,680,779. Inertial navigation systems. Naval Air Systems Command. N00019–67–C–0623.

25—**General Dynamics**, Pomona, Calif. $4,000,000. Standard Arm missiles. Naval Air Systems Command. N00019–67–C–0399.

—**General Electric**, Utica, N.Y. $3,666,675. Guidance and control groups for Chaparral missiles. Naval Air Systems Command. N00019–68–C–0322.

—**Raytheon Co.**, South Lowell, Mass. $2,686,585. Guidance and control groups for Chaparral missiles. Naval Air Systems Command. N00019–68–C–0323.

26—**Bendix Corp.**, Teterboro, N.J. $4,930,023. Poseidon (C–3) missile inertial components. Special Projects Office. N00030–68–C–0169.

—**H. W. Stanfield Co. and S. L. Haehn, Inc.**, San Diego, Calif. $1,419,831. Construction of a Navy Exchange Service Center at the San Diego Naval Station. Southwest Div., Naval Facilities Engineering Command, San Diego, Calif. N62473–67–C–3199.

—**Arthur D. Little, Inc.**, Cambridge, Mass. $1,107,788. Technical consultation and engineering assistance. Naval Ship Systems Command. N00024–68–C–1137.

—**General Motors**, Goleta, Calif. $1,000,000. Continuation of current efforts to establish the design, development, test proof and qualification of a warhead and exploder for MK 48 MOD O torpedoes. Naval Ordnance Systems Command. N00017–67–C–1218.

30—**General Electric**, Washington, D.C. $7,204,616. Poseidon (C–3) training facilities. Pittsfield, Mass. Special Projects Office. N00030–67–C–0050.

—**Dale Electronics, Inc.**, Yankton, S.D. $5,842,347. M990 E4 bomb fuzes for Snake-eye missiles. Navy Ships Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3494.

—**General Instrument Corp.**, Chicopee, Mass. $5,606,642. M990 E4 bomb fuzes used on Snakeye. Navy Ships Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3493.

—**RCA**, Van Nuys, Calif. $1,047,072. MK 26 MOD O safety devices for Snakeye. Navy Ships Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3495.

—**Condor Industrial Corp.**, Wheaton, Ill. $1,084,568. MK 26, MOD O safety devices for Snakeye. Navy Ships Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3496.

—**Honeywell, Inc.**, Hopkins, Minn. $3,279,758. Design and development of a low speed fuel-air-explosive weapon system. Navy Purchasing Office, Los Angeles, Calif. N00123–68–C–0436.

—**Curtiss-Wright Corp.**, Wood-Bridge, N.J. $1,207,734. Spare parts in support of R3350–W26 engines for A–1E aircraft. Navy Aviation Supply Office, Philadelphia, Pa. F41608–67–A–5900–GBCJ.

—**Kilgore Corp.**, Toone, Tenn. $1,041,009. MK 25, MOD 3, marine markers. Navy Ships Parts Control Center, Mechanicsburg, Pa. N00104–68–C–3474.

—**Amecom**, Silver Spring, Md. $1,266,025. Conversion of classified electronic countermeasures sets, including engineering services, equipment repair parts and associated data. Naval Ship Systems Command. N00024–67–C–1533.

31—**Vitro Corp. of America**, Silver Spring, Md. $13,544,736. Engineering and support services and facilities for Terrier, Tartar, Talos, Standard and Point Defense missiles. Naval Ordnance Systems Command. N00017–68–C–4401.

—**Raytheon Co.**, Lexington, Mass. $8,694,000. Sparrow III missiles and related equipment. Lowell, Mass. N00019–68–C–0225.

—**Data Products Corp.**, Culver City, Calif. $1,442,080. Line computer printers and associated support items. Naval Ship **Systems Command. N00024–68–C–1136.**

DEPARTMENT OF THE AIR FORCE

2—**Loral Corp.**, Bronx, N.Y. $2,322,288. Work on an electronic countermeasure system. Warner-Robins Air Materiel Area, (AFLC), Robins AFB, Ga. 33657–68–C–0531.

—**United Aircraft**, West Palm Beach, Fla. $3,300,000. Advance development program to demonstrate a high performance reusable oxygen-hydrogen rocket engine. Air Force Flight Test Center, (AFSC), Edwards AFB, Calif. AF–04611–68–C–0002.

—**LTV Corp.**, Dallas, Tex. $3,000,000. Development work on space vehicles. Space & Missile Systems Organization, (AFSC), Los Angeles, Calf. AF–04–695–1050.

—**Philco-Ford Corp.**, Palo Alto, Calif. $3,500,000. Work on a satellite control network. Space & Missile Systems Organization. (AFSC), Los Angeles, Calif. AF–04701–68–C–0086.

3—**Jet Avion Corp.**, Hialeah, Fla. $1,265,519. Production of spare parts for J–57 and TF–33 aircraft enginers. San Antonio Air Materiel Area, (AFLC), Kelly AFB, Tex. F41608–68–C–1404.

4—**Electronic Communications, Inc.**, St. Petersburg, Fla. $2,001,060. Production of airborne electronics equipment for C–135 aircraft. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga. F09603–67–C–3714–P001.

—**General Electric**, West Lynn, Mass. $38,228,200. Production of J–85 aircraft engines. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. F33657–67–C–1659.

—**Lockheed Aircraft**, Burbank, Calif. $1,767,000. Production of spare parts for F–104 aircraft. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. F0406–67–A–0385–SC–01.

5—**Hazeltine Corp.**, Little Neck, N.Y. $3,736,260. Production of receiver-transmitter systems for aircraft. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. F33657–68–C–0610.

—**Philco-Ford Corp.**, Palo Alto, Calif. $1,800,000. Logistics support of the satellite control network. Space & Missile Systems Organization, (AFSC), Los Angeles, Calif. F04701–68–C–0060.

9—**A. J. Industries, Inc./Sargent Fletcher Co.**, El Monte, Calif. $1,217,222. Production of external fuel tanks for A-7 aircraft. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–F33–657–68–C–0702.

—**Batesville Mfg. Co./Camden Mfg. Co.**, Camden, Ark. $4,496,500. Production of aircraft ordnance. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–F–33657–68–C–0733.

—**Collins Radio Co.**, Cedar Rapids, Iowa. $3,280,155. Production of radio receiver equipment. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla. AF–F34601–67–A–2108–02–3.

—**Stanley Aviation Corp.**, Denver, Colo. $1,365,000. Production of escape system modification kits for T–28 aircraft. Sacramento Air Materiel Area (AFLC), McClellan AFB, Calif. AF–F–04–686–67–C–2–180–P008.

10—**Boeing Co.**, Seattle, Wash. $9,295,000. Production of Minuteman missiles. Space & Missile Systems Organization, (AFSC), Los Angeles, Calif. F04694–67–N–0119.

11—**General Electric**, Arkansas City, Kan. $1,897,136. Overhaul and modification of F–85 engines and components. Oklahoma City Air Materiel Area, (AFLC), Tinke AFB, Okla. F34601–67–C–5321–P003.

12—**Perkin Elmer Corp.**, Norwalk, Conn. $1,390,100. Manufacture of LASER reconnaissance sets. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–F33657–68–C–0076–0004.

15—**Maytronics, Inc.**, Colorado Springs, Colo. $2,198,601. Production of electro-optical systems and related equipment. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga. AF–F09603–68–C–0810.

16—**North American Aviation**, Anaheim, Calif. $12,000,000. Production of depot maintenance equipment to support the Minuteman missile program. Space & Missile Systems Organization, AFSC, Los Anegels, Calif. AF–04–(694)–587.

—**Batesville Mfg. Co.**, Camden, Ark. $1,626,552. Production of bomb containers and dispensers. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–F33657–68–C–0626.

—**Aerodex, Inc.**, Miami, Fla. $1,448,714. Overhaul of reciprocating aircraft engines. San Antonio Air Materiel Area, (AFLC), Kelly AFB, Tex. AF–F41608–68–C–0616.

17—**Maxson Electronics Corp.**, Great River, N.Y. $6,136,000. Fuze assemblies for various aircraft bombs. Macon, Ga. Ogden Air Materiel Area, (AFLC), Hill AFB, Utah. AF–F34601–67–A–2198.

18—**Lockheed Missile & Space Co.**, Sunnyvale, Calif. $5,700,000. Agena launch services at Vandenberg AFB, Calif., for period Oct. 1, 1967–Sept. 30, 1968. Space & Missile Systems Organization, (AFSC), Los Angeles, Calif. F04701–68–C–0070.

—**AiResearch Mfg. Co.**, Phoenix, Ariz. $1,754,536. Production of gas turbine engines. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla. F34601–68–C–2390.

—**Norair Engineering Corp.**, Washington, D.C. $4,546,020. Construction of 250 family housing units at Andrews AFB, Md. F49642–68–C–0148.

—**Collins Radio Co.**, Richardson, Tex. $7,090,000. Production and installation of high frequency single-sideband ground/air/ground communication facilities. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla. F34601–68–C–2474.

—**Bolt, Beranek & Newman**, Cambridge, Mass. $1,750,000. Development of prototype techniques for communicating with computer networks and measuring the processes of man/computer systems. Electronice Systems Div., (AFSC),L. G. Hancom Field, Mass. F19628–68–C–0125.

19—**C. E. W. Womack, Inc.**, Virginia Beach, Va. $1,524,100. Construction of 100 family housing units at Langley AFB, Va. 4500th Air Base Wing, Langley AFB, Va. F44600–68–C–0129.

—**General Motors**, Hudson, Ohio. $1,955,178. Production of heavy loading equipment with adverse terrain capability. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. F3657–67–C–1370 P006.

23—**Modulux, Inc.**, Newark, Calif. $1,542,462. Manufacture of modular relocatable buildings in support of Southeast Asia requirements. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga. AF–09693–68–C–1307.

—**Hercules, Inc.**, Wilmington, Del. $1,834,672. Production of Stage III Minuteman II missile motors. Magna, Utah. Space & Missile Systems Organization, (AFSC), Los Angeles, Calif. AF–04(694)–903.

24—**A. J. Industries**, El Monte, Calif. $3,695,474. Production of fuel tank assemblies for F–4C aircraft. Ogden Air Materiel Area, (AFLC), Hill AFB, Utah. AF–42(600)–40585.

—**Cornell Aeronautical Laboratory**, Buffalo, N.Y. $1,000,000. Analysis and evaluation of the effectiveness of penetration aids. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–3615–68–C–1319.

25—**LTV Electrosystems, Inc.**, Greenville, Tex. $2,000,000. Modification of C–130 aircraft. Aeronautical Systems Div., (AFSC), Wright-Patterson ARB, Ohio. AF–33657–68–C–0707.

—**Electronic Communications, Inc.**, St. Petersburg, Fla. $1,804,696. Production of communications equipment for C–135 aircraft. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga. AF–096030–68–0–A–0211–0006.

26—**Lockheed Aircraft**, Sunnyvale, Calif. $5,000,000. Operation and maintenance of the satellite test annex and the Vandenberg tracking station of the Air Force Satellite Control Facility. AF 04701–68–C–122; $2,000,000. Operation and maintenance of tracking stations in Hawaii and Kodiak, Alaska. AF–04701–68–C–0104. Headquarters, Air Force Satellite Control Facility, Los Angeles, Calif.

—**Northeast Construction Co.**, Albuquerque, N.M. $4,763,202. Construction of 300 family housing units at England AFB, La. Procurement Div., England AFB, La. AF–16600–68–C–0166.

—**North American Rockwell Corp.**, Anaheim, Calif. $1,750,000. Overhaul and repair of air-to-ground missile parts and components. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla. AF–34601–68–C–0083.

—**LTV**, Greenville, Tex. $1,572,998. Inspection and repair of F and TF–102 aircraft. Greenville, S.C. San Antonio Air Materiel Area, (AFLC), Kelly AFB, Tex. AF–41608–68–C–0033.

29—**Doehler-Jarvis Co.**, Toledo, Ohio. $3,132,983. Aircraft bomb components. Batavia, N.Y. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF33657–68–C–0775.

—**Honeywell, Inc.**, Hopkins, Minn. $8,851,920. Aircraft bomb components. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–33657–68–C–0776.

31—**Chromalloy American Corp.**, New York, N.Y. $1,571,800. Repair and application of protective coating on J57 engine turbine nozzle guide vanes. Gardena, Calif. San Antonio Air Materiel Area, (AFLC), Kelly AFB, Tex.

—**Aerojet General**, Downey, Calif. $15,830,000. Production of aircraft ordnance. Batesville, Ark. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. AF–33(657)–16753.

—**General Motors**, Indianapolis, Ind. $1,999,000. Development work on an advanced turbine engine gas generator. Aeronautical System Div., (AFSC), Wright-Patterson AFB, Ohio. AF–33(657)–68–C–0363.

—**United Aircraft**, Hartford, Conn. $1,000,000. Development work on an advanced turbine engine gas generator. Aeronautical System Div., (AFSC), Wright-Patterson AFB, Ohio. AF–33657–68–C–0362.

—**Fluidigenics Co.**, National City, Calif. $1,949,378. Ground test equipment for test and calibrating aircraft data computing systems. San Antonio Air Materiel Area, (AFLC), Kelly AFB, Tex. AF–41608–68–D–8125.

—**Hayes International Corp.**, Dothan, Ala. $1,338,225. Inspection, repair and modification of C–118 aircraft. Warner-Robins Air Materiel Area, (AFLC), Robins AFB, Ga. AF–09603–68–C–0173.

Report on Defense Industry Profit Review Available

Release has been made of the initial report based upon a study, performed for the Defense Department by the Logistics Management Institute, to develop a method for providing DOD with visibility over realized profits of defense contractors. The study endeavors to measure profit trends by size of company and type of contract, and to compare trends on both defense and commercial business.

The report is titled "Defense Industry Profit Review." Authorized defense contractors and grantees may obtain this document (Control No. AD 664–700 for Volume 1, AD 664–701 for Volume 2), without charge, from the Defense Documentation Center, Cameron Station, Alexandria, Va. 22314. It is also available for purchase at $3 for the entire report from the Clearinghouse for Federal Scientific and Technical Information, Department of Commerce, Springfield, Va. 22151.

Symposium Scheduled on Night Combat Operations

The Defense Department and the National Security Industrial Association will hold a classified symposium on April 30-May 2. The sessions will be conducted at the National Bureau of Standards, Gaithersburg, Md.

Purpose of the symposium is to focus attention of the industrial community on needs of the Military Services to improve their ability to fulfill missions at night and under conditions of limited visibilty.

For additional information, the contact is: National Security Industrial Association, 1030 15th Street NW, Washington, D.C. 20005, Telephone: (202) 296-2266.

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U.S. Air Force "Bare Base" Concept Expected To Be Operational by 1970

Transport an air base the size of a small city half-way around the world and have it ready for combat operations within a matter of hours?

No longer is this just a military strategist's dream. Such tactical air mobility will become a reality in 1970 when the Air Force hopes to put its "bare base" concept into operation.

The new concept envisions the development of highly mobile facilities which can be flown to an advanced site and erected immediately to provide the essential elements for a suitable operational base.

Such facilities would include hangers, barracks, dining halls, communications centers, dispenseries and maintenance shops as well as various essential equipment required to sustain operations.

Reduced weight and volume, simplicity in operation and dual uses for certain types of equipment are required to achieve the improved speed and air mobility sought in the bare base idea.

In the planning stage are structures which would double as storage containers in the air transport mode, and then expand to three times their size to be used as living quarters or maintenance shops.

Other items under study include a family of sectionalized equipment for the construction work necessary to establish an operational base swiftly, an air-transportable vacuum cleaner capable of cleaning a 7,000-foot runway in one hour, new storage structures composed of fabric one-half the weight of present tents and with flooring one-quarter the usual weight, and advances in electrical power and lighting and water distribution systems.

All equipment being designed for bare base use will have a minimum life of five years, averaging two moves per year. Storage life of the equipment will be 10 years.

Colonel William D. Baxter heads the Bare Base Office, which is part of the Operations Division of the Deputy for Limited War, Aeronautical Systems Division, Air Force Systems Command, Wright-Patterson AFB, Ohio.

Navy League National Convention To Be Held in Hawaii, April 21–27

The 66th annual national convention of the Navy League of the United States will be held April 21-27 at the Hawaiian Village Hotel, Honolulu, Hawaii.

"Hawaii—Pacific Keystone of Power" is the theme of this year's convention. Key speakers will be the Secretary of the Navy, Chief of Naval Operations, and the Commandant of the Marine Corps.

Highlights of the convention will be briefings by the Commander-in-Chief; Pacific; Commander-in-Chief, Pacific Fleet; and Commander, Fleet Marine Force, Pacific.

Also included in this year's program are Navy and Marine Corps presentations, a Marine Corps firepower demonstration at Kaneohe, and performance by the Navy Blue Angels flight demonstration team.

For additional information on the convention, the contact is: Dale M. Shear, Convention Coordinator, Navy League of the United States, 818 18th Street NW, Washington, D. C. 20006, Telephone: (202) 298-9282.

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